

**THE
RAILWAY GAZETTE**

A Journal of Management, Engineering and Operation
INCORPORATING

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CONTENTS

	PAGE
Editorials	625
Letters to the Editor	628
The Scrap Heap	629
Overseas Railway Affairs	630
A New Rail Joint	632
4-8-4 Streamlined Locomotives, S.P.R.	633
Special Horizontal Boring Machines	634
Railway News Section	635
Personal	635
Transport Services and the War	637
Stock Market and Table	644

DIESEL RAILWAY TRACTION SUPPLEMENT

The June issue of THE RAILWAY GAZETTE Supplement, illustrating and describing developments in Diesel Railway Traction, is now ready, price 1s.

GOODS FOR EXPORT

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as indicating that they are available for export

NOTICE TO SUBSCRIBERS

Consequent on further paper rationing, new subscribers cannot be accepted until further notice. Any applications will be put on a waiting list which will be dealt with in rotation in replacement of subscribers who do not renew their subscriptions

POSTING "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE possesses the necessary permit and facilities for such dispatch.

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas

REDUCTION IN SIZE OF PAGE

To economise in paper our readers will observe a slight reduction in the size of THE RAILWAY GAZETTE in that the size of the page has been reduced from 9 in. x 12 in. to 8½ in. x 11½ in. The type area of the page remains the same, namely, 7 in. x 10 in., but the surrounding margins have been reduced. This of course detracts from the appearance of the paper, but is one of the exigencies of the war

TO CALLERS AND TELEPHONERS

Until further notice our office hours are:

Mondays to Fridays 9.30 a.m. till 5.30 p.m.

The office is closed on Saturdays

ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

The Labour Party View

THE annual conference of the Labour Party has raised the usual suggestion for transport co-ordination. On this occasion, Mr. Arthur Deakin, Acting Secretary of the Transport & General Workers Union, moved the resolution that all forms of transport—road, rail, and inland waterways—should be co-ordinated under national ownership. Mr. Deakin explained that the resolution did not seek the immediate establishment of a national board of control, and he recognised that it was not possible speedily to change from one form of control to another. For this reason a radical change of the character implied in the socialisation of the industry could not be suddenly embarked on in present circumstances. On the other hand, his view was that if the Railway Executive Committee had on it representatives of the trade unions there would be more effective organisation of the railway system. It is at least satisfactory to have on record the acknowledgment by Mr. Deakin that it is not possible, in present circumstances, to implement a large scale revolution in the control of the railway industry. The point of the practical impossibility, quite apart from the undesirability, of undertaking a reorganisation of this kind in the midst of war is far too often overlooked by some of Mr. Deakin's more ardent colleagues. The suggestion was made that the Railway Executive Committee should embody labour members. The Railway Executive Committee functions as the agent to the Minister of War Transport, and one would imagine that the political complexion of its members does not arise.

Railway Credit

It has been suggested more than once recently that in the arrangements which the railway companies came to with the Railway Finance Corporation in 1936 the railways served the State at the expense of their stockholders, and also that the transaction was an illustration of capitalism having failed to function, in that the railways were unable to provide for essential development and modernisation on the basis of their own credit. It will be recalled that the late Lord Stamp dealt with each of these criticisms at the annual meeting of the L.M.S.R. in 1938. He pointed out that the arrangements were mutual. The railways agreed to undertake certain works which otherwise would not have been entered upon, but which became justified with cheaper money obtainable by a Treasury guaranteed loan, in turn covered by an obligation to issue L.M.S.R. debenture stock as collateral security. The advantage to the Government was in the additional employment created by the placing of orders in the industrial areas. The viewpoint of the companies was that works should not be undertaken by the railways at the stockholders' expense for non-railway purposes, and that the railways had neither asked for nor received any public assistance for anything done or proposed to be done for railway purposes.

Transport Finance Corporations

Accounts for the year 1941 have been published of the Railway Finance Corporation Limited and the London Electric Finance Corporation Limited. These corporations were formed in 1935 by arrangement with the Treasury to provide a means of raising capital for transport developments, with the assistance of Government credit, on terms much more favourable than the main-line railways and London Transport could have obtained on their own credit alone. Loans from the Railway Finance Corporation as shown in the balance sheets of the four main-line companies totalled £26,189,999 as at December 31, 1941, against £24,907,971 at December 31, 1940. Figures for the Great Western and for the Southern are unchanged at £5,435,660 and £5,929,811 respectively. Loans by the corporation to the London Midland & Scottish now total £8,894,717, against £8,042,500, and to the London & North Eastern £5,929,811, against £5,500,000, and it is expressly stated in the L.N.E.R. report that the additional £429,811 completes the amount of the loan. At December 31, 1941, the amount borrowed by London Transport from the London Electric Transport Finance Corporation stood at £28,271,658. London & North Eastern loans from this corporation at the same date amounted to £6,836,750, and Great Western loans to £1,562,298.

Pullman Incorporated

The annual report of Pullman Incorporated, covering operations for 1941, commemorates the 75th anniversary of the Pullman Company and participation with the railways of the United States in three quarters of a century of transportation

progress. A consolidated net income was earned of \$10,918,820 (\$3.31 a share) after all charges and taxes, compared with the 1940 earning of \$7,484,125 (\$1.93 a share). This net income was made up of \$1,732,949, against \$2,243,859, from sleeping and parlour car business, and of \$9,257,848, against \$5,066,615, from manufacturing business, less a debit of \$71,796 in investment income. Car operations in 1941 were characterised by the largest traffic volume since 1930, a rapid expansion in operating costs, and the smallest margin of profit since 1938. Troop movements and other Government travel accounted for most of the increased carryings and helped to bring down the average operating revenue per passenger from \$4.07 to \$3.96. Regular commercial and tourist travel—the profit-producing end of the business—scored a small gain for the year 1941 as a whole, but the war has cut deeply into the tourist business, causing widespread cancellation of winter vacation plans. To meet the higher labour and material costs and the heavier taxes the company obtained on March 13, 1942, from the Interstate Commerce Commission, approval of an increase of 10 per cent. in all sleeping and parlour car rates, fares, and charges.

....

Non-stop Wartime Records

A feature of the British summer train services, which came into operation on May 4 last, is the excision of intermediate stops on long-distance expresses, partly to equalise the loading of trains which run regularly in two sections, and partly to prevent the unnecessary occupation of running lines through important junctions by expresses which carry through passenger complements from starting-point to destination. Examples of the former policy are given by the L.N.E.R. in cutting out the Grantham stop on the down Flying Scotsman, and on the G.W.R. by omitting the Exeter, Westbury, and Reading stops on the 8.50 a.m. from Paignton to Paddington. The chief exponent of the latter policy is the L.M.S.R., and, as is evident in the table of current non-stop schedules set out on p. 641 of this issue, the result is a collection of non-stop achievements that is without parallel in any belligerent country other than the United States. Once weekly there is a non-stop journey of 301.1 miles from Euston to Kingmoor, Carlisle; nightly the Night Scot is worked in both directions without a stop over the 243.3 miles between Crewe and Glasgow, and one of the Highland sleeping car trains from Crewe to Motherwell, 230.4 miles; and on Saturdays there is a run without intermediate stop from Euston to Lytham, 219.8 miles. All these five runs are longer than any others made with steam power in any part of the world, even including the U.S.A. This non-stop programme, after nearly three years of war, is a tribute alike to the high standard of locomotive maintenance that has been continued in very difficult conditions, which alone could make it possible, and also to the efficiency of British wartime operating methods.

....

University Railway Training

Some facts of considerable interest relative to the effect of university training on railway personnel were brought out at the recent meeting of the American Railway Engineers' Association in Chicago. One speaker who had delved into "Who's Who" discovered that one-third of the railway mileage of the United States and Canada is under the presidency of graduates of engineering colleges; a second third under graduates of other colleges; the remaining third of the presidents have had no college training. The committee which presented a report on co-operative relations between the railways and the universities found that there is a real demand on the part of the railways for college-trained men as supervisory officers, but that as yet the railways have not voiced this demand to the same extent as other industries. They are now showing increased interest, however, and the colleges are prepared to co-operate with them in supplying men qualified to meet the need. The committee pointed out that it is of considerable importance to both the universities and the railways that college students should have a better appreciation of, and take a greater interest in, the railways, and that the chief approach to the latter lay in making the students familiar with railway facts. This could be done through the medium of libraries, inspection trips, and meetings, but, above all, through providing students with summer employment on the railways; a succession of four summers was suggested on track maintenance, in the signal department, in a yardmaster's office, and in the accounting and auditing department respectively as a good preparatory course. In the winter it was in the interest of the railways to offer their services to the student societies in the realm of lecturing and educational excursions.

Maximum Wagon Utilisation

An important step towards ensuring the maximum possible utilisation of wagons in the United States has been taken by Director Eastman of the Office of Defence Transportation. An order has now been issued that from May 1 freight wagons carrying "L.C.L." or less than carload traffic must not travel with loads of less than 6 tons; on July 1 the minimum limit will be increased to 8 tons and on September 1 to 10 tons. The only permissible exceptions will be wagons carrying military traffic; consignments for which no other mode of conveyance is available; consignments specially authorised by the O.D.T.; also cars loaded to their full cubic capacity, cars ineligible for interchange between railways under M.C.B. rules, cars containing perishables or explosives, refrigerator cars carrying loads in a direction opposite to their normal loaded routes, and pick-up cars likely to increase their loads to at least 10 tons before reaching their destinations. If insufficient freight is available after 36 hr. to bring the load of a wagon up to the prescribed minimum, the traffic must be diverted to another carrier, and all descriptions of transport—rail, road, and water—are compelled to accept and convey such diverted consignments to the extent of their available capacity, subject to certain terms and conditions set forth in the order. The order may involve regularly scheduled shipping days for certain lines of merchandise; pooling of merchandise traffic or revenues, or both, between specified points; joint loading or operation of merchandise cars between two or more points; and various other transport developments. With loyal co-operation on the part of the carriers, Mr. Eastman hopes to raise the average tonnage of miscellaneous merchandise carried by the railways to 12 tons a wagon.

....

No Battle of the Gauges in Switzerland

Shortly before the opening in 1847 of the first railway to run throughout on Swiss territory, between Zurich and Baden, the gauge question was raised in the Swiss Diet at the instance of the Canton of Bern, whose representative asked that steps be taken to ensure all railways in the country being built to a common gauge, unless the Diet should expressly sanction an exception. The usual arguments derived from convenience and military advantage were put forward and discussed. No immediate action appears to have been taken, but a federal ordinance of 1854 prescribed the Stephenson gauge as standard. Later the metre gauge was admitted and in a few special cases, such as the Pilatus rack railway, an odd gauge. It has often been stated that the Zurich-Baden line was originally broad gauge. The *Swiss Federal Railways Bulletin* says this is a misapprehension which has arisen from the fact that the first locomotives were made at Karlsruhe, in the German Grand Duchy of Baden, which had the 5 ft. 3 in. gauge from 1840 until early in 1855.

....

Axis "New Order" for Railways

German post-war aspirations in the transport sphere seem to favour size in railway matters. In our issue of April 17 reference was made to a contemplated 12 ft. gauge and among the grandiose railway projects are plans for connecting Europe more directly with Asia by high speed railways of exceptionally broad gauge. In Germany, Dr. Wiens, of the Reichsbahn, foresees one of not less than 13 ft. 1½ in., and has even conceived the idea of converting the Trans-Siberian railway in this manner, claiming that one broad-gauge goods train would have the same loading capacity as one of the normal cargo ships previously plying between Hamburg and Vladivostok. The time of transit for a given load between Berlin or Hamburg and Vladivostok thus could be reduced by some 43 days. Another scheme which the Germans have in mind is for the construction of a four-track railway connecting the Ruhr district with the Donetz Basin, via Upper Silesia, Southern Poland, and Kiev. Japan also has ideas on post-war railway development. Three routes have been evolved for the purpose of linking Japan more closely with Russia; the one most favoured is via India, Baluchistan, and Persia.

....

Signalling to Aid American War Effort

Reports from the U.S.A. indicate that a large amount of signal installation work is being included in priorities connected with the enlargement of rail facilities to serve munition works, camps, training centres, and other places associated with the war effort. Traffic will necessarily increase almost everywhere, and very considerably on some routes previously carrying comparatively

little. Centralised traffic control is now found to offer such advantages over earlier arrangements in the expeditious handling of heavy freight services over single line routes that several installations have been authorised and are to be pushed forward as quickly as possible. Priorities are to be given to the provision of level-crossing warning signals at situations near camps and factories. In addition to a few large installations, covering a complete stretch of line, there are very many small ones, to cover new sidings, junctions, and so forth; these are very often quite as interesting technically and perform an essential service. The maintenance of all this new work is calling for special care in organisation, because of the heavy outside demand for skilled men.

Some Post-War Objectives

RECENT declarations of post-war aims necessarily have been phrased in broad terms. We have been assured, for instance, of the Government's recognition of the need to avoid both inflation and deflation, of the necessity for rebuilding our export trade, of the importance of planning against unemployment and its kindred evils, and generally of ensuring that the peace as well as the war is won. At this time, when a good many minds are bent towards the post-war era, and are beginning to give thought to the position which may then obtain, it may be pertinent to point to a few of the lessons which the present war should have taught. One fundamental truth which the most biased cannot escape is the fact that but for the high level of efficiency in which the railway system of this country had been maintained for so many years at the expense of the stockholders, the service which it has given the war effort could not have been achieved. It should not be too much to hope that never again will the railway system of this country be the victim of the apathy and neglect which for so long had characterised the Government's attitude towards it. One need only recall the dire straits into which the finances of the companies had been forced to degenerate in the years preceding the war, and which had made necessary the "square deal" campaign, to realise how pitifully short-sighted our administrators had been in their refusal to take the necessary measures to maintain the health and vigour basically needed for the transport of the country. Such a position must never again be permitted to arise.

There are many other industries, too, some of them closely associated with, and in part dependent on, the British railways, which in the period between the last war and the present conflict had been allowed to fall into a sad state of neglect, but which were found to be fundamental to the nation's effort when war broke out. The great heterogeneous mass of trades which in the aggregate comprise the British engineering industry provides an excellent example of this. Many of the constituent undertakings are small; their activities in many ways are diverse; it may be for these reasons they were unable to put their claims for consideration before the authorities as forcefully as some others were able to do. The service they have rendered has been so great that they have every reason to expect that, when the immediate demands on them have been fulfilled, they should not be allowed to drift back into the state in which many found themselves before the present war became imminent. In many cases they are units in a potentially valuable export industry and if fully developed would add much to the wealth of the nation, and to the wellbeing of overseas markets. It is true to say, indeed, that the export industries of this country, many of which battled valiantly without much help, but often hindrance, from official circles, have seen the fruits of their enterprise destroyed by political and other factors outside their control. When this war is over, justice will demand that they should be assisted by all means possible to re-establish and extend their overseas connections. In the post-war era it is recognised that it will not be possible immediately to escape all systems of Governmental control which have spread during the war. There is every reason, nevertheless, to demand that, in the period before the control is relinquished, it should be used to guide and assist industries and not to hinder or stultify them.

Another "Solution" for Road and Rail

IN the spring of 1940 Sir Osborne Mance published an interesting volume* on road and rail transport, which surveyed the problem, included a commentary on the position immediately before the outbreak of war, and concluded with a critical examination of the issues. Mr. Gilbert Walker, of Birmingham, in a book now published,† has followed much the same course, but Mr. Walker's book is in many respects extraordinary. There is

a final chapter dealing with road and rail after the war which is extremely interesting and valuable. But the remaining chapters contain so many errors of fact or mis-statements that unless one is patient and plods one may never reach the final chapter—which would be a pity. Space prevents listing all the mistakes or loose statements, but the following are a few. Railway "rates once fixed can be changed only if notice is given and permission obtained from an official tribunal."—p. 18. Yet on p. 128 the reader is told: "The railway companies may put in any new rate not more than 40 per cent. below standard, subject only to the formality of notifying the Minister of Transport within 14 days." And on p. 170: "in practice railway companies may make any changes in rates which they see fit, as and when they choose." One at least of these three statements must be incorrect. On p. 29 a table is inserted expressing commercial-goods motor-vehicle duties as a percentage of the expenditure on class I and II roads. It is explained on p. 28 that the roads principally used by lorries are the class I and II roads and therefore the expenditure on these is taken for the purpose of the table. But the duties given are those derived not only from lorries but from all goods vehicles, including the town delivery van which may never use a class I or II road. It is like applying two and sixpence to half past two! "One-third of the economies resulting from amalgamation" was one of the items in arriving at the standard revenue—p. 50. This suggests that the whole of the economies arising from amalgamation were added, which is incorrect, as will be seen by reference to the Railway Rates Tribunal judgment of June 9, 1925. "The companies, . . . immediately the standard charges became effective on January 1, 1928, took advantage of these provisions [Section 36 of the Railways Act] to continue wholesale exceptional rates in operation at the time."—p. 63. At the end of 1923 the railways discussed with the traders the best methods of expeditiously obtaining the agreements in writing referred to in Section 36 and schemes of agreed machinery were evolved and subsequently carried into effect. As a result of the working of this machinery references were made to the tribunal before the "appointed day" of numerous rates more than 40 per cent. below standard which the railways were prepared to continue by agreement without modification, or were not prepared to continue or were prepared to continue subject to modification. There was no question of the railways "taking advantage" of the provisions in the sense suggested by Mr. Walker, as will be clear to anyone who reads the proceedings of the tribunal. "Some traders . . . consign traffic in bulk by road to a rail-head, and there give it to the railway for local distribution."—p. 109. It is not merely a question of giving it to the railways; the railways must by law accept it. "The recommendations of the Salter Conference were passed into law at once. The Finance Act, 1933, levied higher duties on goods motor vehicles, though somewhat less than the scale suggested by the conference."—p. 138. As the conference expressly stated as to its proposals that "it must not be assumed that if one part was rejected we should remain agreed upon the remainder," it can hardly be said that its recommendations were passed into law.

Perhaps in the circumstances we may jump to the final chapter. Mr. Walker's proposal for the post-war arrangement of road and rail is that both should be left in private ownership but should be co-ordinated by disintegrating the railways into their constituent lines, whilst preserving the amalgamated groups, and that each line should charge a scale of rates appropriate to its physical characteristics and the economic circumstances of the traffic passing over it. This would produce three broad classes of line—(a) those which meet all their costs, (b) those which cover direct working costs only, (c) those which do not cover direct working costs. The first group would be rate-controlled, the second would be left to compete with road free from rate control, the third would be abandoned and the traffic left wholly to road. The scheme implies different bases of rates between (a) and (b)—though both are subject to road competition—and the abandonment of (c) would require powers to compel hauliers to provide services in areas they deem to be unremunerative. If lines in (c) were found to be necessary they would be retained and supported by raising the road rates and thus influencing the traffic back to rail. Mr. Walker adds "there is no good economic reason for continuing to work a railway which does not pay, or for maintaining railway services at a loss, just because there might otherwise be difficulty in arranging for transport, or because carriage might otherwise become more expensive." We might test Mr. Walker's proposal by taking an example. In his evidence before the Royal Commission on Transport in 1928 the late Lord Stamp said this: "There are lines, if you viewed them from the economic traffic point of view, such as the Highland line, where you might say, 'We will close that,' but from the national point of view that would be a great pity. The Highland line was absolutely indispensable during the war." (1914-1919.) Suppose Mr. Walker's scheme had operated in, say, 1938 when the railways were asking for equality of treatment by

* "The Road and Rail Transport Problem" by Brig.-General Sir H. Osborne Mance, Pitman, 7s. 6d., reviewed in THE RAILWAY GAZETTE, May 3, 1940.

† "Road and Rail," by Gilbert Walker, George Allen & Unwin, 12s. 6d.

the Government compared with road. Would the Highland line have been closed? Presumably it would; on any economic test it certainly ought to have been. There might have been no difficulty then in conveying the traffic by road. Yet if that had happened it would have been nothing short of disastrous in the events which followed. No subsidy was given the Highland line to keep it going; now that it has proved its value over and over again, those who provided the money for it are not even allowed a reasonable return when it is being fully used. Mr. Walker states it would be a matter for serious concern if the standard revenue "became the basis for the settlement after the war," which implies that once the Highland line has served its immediate purpose it would be scrapped. Again, does Mr. Walker's proposal apply to road as well as rail? He does not say so. Yet consider Mr. J. F. Heaton's statement at the annual meeting of Thomas Tilling Limited, in 1938, that taking the whole of the company's services throughout the country "in respect of more than one-half of them the costs are in excess of the receipts, or, in other words, they are being operated at a loss." The fact that public road transport is subsidised by the State because it has not had to invest as a first cost in its track, does not weigh with Mr. Walker. He considers this "as one of the economies which road transport offers the public," and adds "there is no reason why an economy as important as this should be offset by taxation." The italics are ours. One might as well ask why, because Threadneedle Street is already there, should

the users of the buildings be taxed by rent? Sir Osborne Mance, it will be remembered, had a greater sense of justice. His view was that road and rail track costs should be pooled and a division of function secured on the basis of the remaining costs. Although it seemed to us there might be practical difficulties in this, it was at least aimed at securing equality of competitive conditions as a basis for co-ordination. Gladstone laid down a famous principle in his Act of 1844 which is all too often forgotten today. His Act, which empowered the State purchase of railways, stated "it is not the intention of this Act that under the said powers of revision or purchase, if called into use, the public resources should be employed to sustain an undue competition against any independent company or companies." The so-called economies which road transport offers to the public, as described by Mr. Walker, are undoubtedly derived from public resources and have caused undue competition with independent undertakings.

Our criticisms are not intended to decry the underlying idea of Mr. Walker's book that the post-war scheme should be aimed at co-ordination of the existing systems on, maybe, a regional basis, with the stimulus of competition to keep down costs and maintain efficient services. There is so much glib talk about nationalisation or unification as an immediate cure for all ills that it is refreshing to find one who refuses to be misled by so apparently easy a solution of the transport problem. The last chapter of his book is extremely thought-provoking and should be studied by all who are interested in the future of public transport.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

The State and the Railways

10-12, Copthall Avenue, E.C.2.

May 29

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Only today have I had the opportunity of reading Mr. Ashley Brown's letter published in your issue of May 22, and your leading article on the subject. Your article has so conclusively dealt with his criticisms relating to management that I have nothing to add on that score. I do think, however, that Mr. Ashley Brown and myself would find common ground of agreement in criticising the financial administration. Indeed, in my letter published in your issue of May 1, I said "What is not equally realised is that the financial solution is the root of the entire problem."

No one has been a stouter champion of the statutory rights of railway shareholders than I have, and I have never been able to understand why they have not been exercised in protecting the stockholders' interests, as in the case of other public utility undertakings, such as water, gas, and electricity. Perhaps the answer is the failure of Parliament to realise what is demanded by the national interest.

For Mr. Ashley Brown's benefit, perhaps you will allow me to add a brief extract from a booklet published by me early in 1938, with a foreword by the late Lord Stamp. I quote from the "Conclusions" which I then arrived at. Now that the standard revenue has been earned with a liberal margin, I feel sure that a national solution of the problem is brought much nearer.

Yours faithfully,
W. J. STEVENS

[EXTRACT]

To those many thousands of small investors who have shown so much patience, a little more patience is confidently recommended. The forces making for restoration of their dividends and the recovery in capital values of the junior stocks are stronger than they have been since grouping—and a good deal more effective perhaps than is generally estimated. Their case is so good and their claims so just that they are entitled to take heart. They may also reasonably look to their directors, now that other claims are being satisfied, for more emphasis on the early achievement of standard revenue and for full co-operation among all the parties concerned to attain that end. The mutual interest between the State, the railwaymen, the public and the shareholders which was deliberately planned under the Act of 1921, and formed the basis of the bargain associated with the return of the railway system to its owners, may at long last be established for the benefit of the nation.

The realisation of the standard revenue is declared by the highest authority—the Rates Tribunal—to be a "public interest" and higher railway policy must be directed accordingly.

Wait and see!

The End of the Broad Gauge

Lillycombe,
Porlock, Somerset

May 25

TO THE EDITOR OF THE RAILWAY GAZETTE

DEAR SIR,—I well remember the broad gauge and May, 1892, and therefore read with great interest your editorial notes (page 586) and Mr. W. G. Chapman's article (page 592) on the final abolition of Brunel's 7 ft. gauge on the Great Western Railway 50 years ago.

At page 586 you state that in the last years before May, 1892, there were only 10 broad-gauge passenger trains a day in and out of Paddington. Actually there were 14 from June, 1890, and never fewer than 12. The latter number applied from March, 1884, to July, 1887, and again from April, 1889, to June, 1890. The 1 p.m. "Jubilee" and 3 p.m. "Zulu" are omitted from your list of down trains.

On page 592 it is stated that conversions from broad to narrow gauge were undertaken from 1858 onwards. Actually there was no conversion of any sort in 1858, or before 1868.

The reference to "about 780 miles of broad-gauge track altered to standard" in 1869/70 is surely a misprint for 1869/79?

Again in the third column of page 592 it is stated that the last broad gauge train to leave Paddington was the 5 a.m. mail for Plymouth on May 21. There was no such train. The last broad gauge train to leave Paddington was the 5 p.m. to Plymouth on May 20; the last to arrive was the night mail (due at 4 a.m.) about 5.30 a.m. on May 21.

The illustration on page 594, described as the down Cornishman, is obviously (from the background) a picture of an up train. Moreover, it has a different van from the real 10.15 a.m. from Paddington which you show on page 593. The train in the view on page 594 was not even the last up train as that was the night mail aforesaid.

Yours faithfully,
E. T. MACDERMOT

Isca Foundry Co. Ltd.,
Newport, Mon.
May 26

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In connection with the article on the broad gauge, in the current number of THE RAILWAY GAZETTE, I notice that you reproduce a familiar photograph, which, to the best of my knowledge, has always been entitled "The down Cornishman passing through Sonning cutting on Friday, May 20, 1892." The last broad-gauge train to the west," and that you also thus describe it.

I think you will agree on examining the photograph that this title must be incorrect, as an examination of the shadows proves conclusively that this photograph depicts an up train that is travelling approximately east, and the shortness of the shadows also indicates that the photograph was taken in the middle part of the day.

Yours faithfully,
A. V. L. FILLINER

The Scrap Heap

QUEEN VICTORIA'S FIRST RAILWAY TRIP

On Monday, Her Majesty accompanied by Prince Albert, returned from Windsor to London by the Great Western Railway. She was received at Slough by Mr. C. Russell, M.P. (the Chairman), Mr. F. P. Barlow, a Director, and Mr. Saunders, the Secretary & Chief Superintendent, and conducted to the royal waiting room. Her Majesty then inspected the station and entered the carriage called the *Royal Saloon*, which was drawn up to London in 25 minutes by the *Phlegethon* engine, conducted by Mr. Gooch, the superintendent of locomotives, accompanied by Mr. Brunel, the chief engineer. At Paddington the arrangements were under the direction of Mr. Seymour Clarke, the Superintendent of the Line, and Superintendent Collard of the company's police. Her Majesty expressed herself extremely gratified.—From *"Herald's Railway Journal," Saturday, June 11, 1842*

A Rail and Road "Close-Up"

At 8.45 p.m. on May 20, in the Forces Programme, Mr. C. Grasemann, Public Relations Officer of the Southern Railway, and Mr. J. H. Turner, Chairman of the Standing Joint Committee of Road Hauliers National Organisations, gave a broadcast in the form of a talk. The main theme was that road and rail were getting together when the war started, and can continue co-operating to the public good on the lines already instituted. By permission we are enabled to publish the following extracts from this broadcast:—

ANNOUNCER: For the next fifteen minutes we present "Close Up" in which you will hear Mr. C. Grasemann, an official of one of the four main-line railway companies, and Mr. J. H. Turner, a leading member of the road hauliers industry. They are in conversation with Leslie Mitchell.

LESLIE MITCHELL: One hears so much about the war of movement, but obviously when you think about it movement in war is really governed by the movement of home transport in the first place. That is why to-night I want to find out from two experts how the situation has developed as to transport in this country.

C. GRASEMANN: I don't know that I altogether approve of your statement that war transport is governed by civilian transport, because, speaking for the railways, I would say that the reverse is, in fact, the case. Civilian transport is, of course, absolutely essential, but we have reached the stage now where priority is naturally given to matters more directly concerned with the war itself.

J. H. TURNER: I can't speak with any authority on matters concerned with passenger transport. My work is concerned entirely with transport of war material and goods connected with the war effort—food, munitions, and raw materials of all kinds.

L. M.: Well, let's start at the beginning, Turner. When was the earliest form of commercial road transport brought into being?

J. T.: That was, of course, a very long time before railways existed in this country. Road carriers are known to have been working as an organised industry since the 13th century. In 1260, for instance, there was a recognised rate for the carriage of goods which was 1d. or 2d. a ton a mile. One of the best-known companies dealing in road transport has its origin in the early part of the 17th century. It started from

the ordinary packhorse owner, and in about 1770 the first steam-driven van was put on the road, by that same firm.

C. G.: Yes, it's rather amusing to realise that the first steam-driven locomotive was used on the roads, and the first railway trains were pulled by donkeys, horses, and even humans.

L. M.: That's astonishing—I didn't know that. What was the object of using rails for horse-drawn traffic?

C. G.: Obviously because rails reduced the friction and once started it was easy to keep them going. But of course it was only used to a very limited extent and for very limited distances.

L. M.: I suppose the real growth of the transport services as we know them to-day began with the industrial era.

J. T.: To all intents and purposes the areas covered by road haulage firms were bounded by the parish in which their horses were stabled.

C. G.: In those days transport was mainly necessary for one reason—to meet the needs of a purely agricultural country.

J. T.: Yes, generally speaking that's true. My grandfather was one of the largest carriers in the County of Kent—he lived at Tonbridge, and when the Bat & Ball station at Sevenoaks was built, it put paid to his business.

C. G.: Funnily enough the same is true of my grandfather whose business in sailing ships was knocked to pieces by steamships. My father joined the railway and I'm railway born and bred.

J. T.: It was then, about a hundred years ago, that the strong element of competition between road and rail began to bear fruit, and I'm afraid it was a bitter fruit while it lasted. It's only natural that men whose livelihoods are seriously affected by a new competitor should resent it.

L. M.: Obviously how to compete against the higher speeds brought about by the steam engine must have set quite a problem for the horsedrawn carriers.

J. T.: Yes, but the tables were turned with the introduction and development of the internal combustion engine. The last war was responsible for that. Road transport came back into its own in 1918 and proved a serious competitor to the railways. For about ten years after the last war it developed very rapidly just as rail had done in the previous century. It was a proper dog fight between the two. From 1930 there was a gradual regulation of road transport, the object being to get better conditions all round. Commonsense, and a growing recognition of the difficulties on each side produced a gradual growth of co-operation.

C. G.: Yes, you remember that in 1937 the railways made their famous "Square Deal" bid for public support in their campaign to be freed of a lot of out-of-date restrictions. These dated back to the days of monopoly and prevented them from giving the best service to their customers. In 1938 co-operation was given further stimulus by the voluntary setting up of the Road-Rail Central Conference.

L. M.: What was the idea behind that?

J. T.: Its main purpose was to get the best service for the community as a whole. The conference is still in existence and doing very useful work, but obviously a permanent policy can't be established until after the war.

C. G.: I think the public still imagine that all we do is throw stones and sling arrows at each other, but it is a fact that nowadays road and rail work together, and in the greatest friendliness to plan for the benefit of the community, the war, and ourselves.

J. T.: The whole purpose of the Road-

Rail Conference is to establish healthy competition based on service rather than competition based on price. Price must be a matter of mutual adjustment—obviously neither side can carry on, now or in the future, without an economic basis, but only mutual adjustment can bring a stop to the cut-throat competition which existed in the past.

L. M.: I suppose the railways will always have the advantage as far as the movement of commodities in bulk are concerned?

J. T.: Well, it all depends on the circumstances. For instance, you can often see motor transport and railway wagons being loaded with the same commodity from the same ship at the same time.

L. M.: I hope I'm not displaying a gross ignorance when I say that I've always understood that our railways are represented in one executive body and that with road transport this is not so. How is it possible to organise hundreds of little firms to act as one?

J. T.: You've certainly touched on one of our difficulties. There are, in fact, a quarter of a million firms in this country who own between them half a million goods vehicles—that works out at an average of two vehicles an operator. It's a good thing of course, from one point of view, because it provides scope for individual enterprise, and it's probably the individuality of road transport which has enabled it to become so successful. But as you say, it presents some difficulty in the matter of organisation for war purposes. Recently the Government has introduced a scheme by which orders can be given in at the Ministry of War Transport offices throughout the country, and those orders are executed with the combined help of hauliers in the locality.

L. M.: What advantages have accrued on your side, Grasemann, from the pooling of rail resources?

C. G.: The four large railways, and London buses and tubes, are all controlled centrally by the Railway Executive Committee, which acts as Manager for the Minister of War Transport. Railways are worked as one in every sense of the word, and competition is gone.

L. M.: That's turned out satisfactorily, has it?

C. G.: Yes: take only one example, before the war there were a lot of wagons particularly at collieries belonging to private individuals, so, after unloading, these wagons had to go back empty to the colliery to which they belonged. That meant a great deal of sorting to bring them back to the place they started from—a lot of railway shunting and that sort of thing. Now all wagons are pooled, which saves a great deal of that shunting. That's helped us to send more help to Russia.

L. M.: Certainly if the winning of this war depends on getting the right things to the right place at the right time, your two organisations have contributed a great deal in difficult circumstances. I only hope it means that the friendship which now exists between rivals will continue after the war.

C. G.: I think there's very little doubt of that. It's obvious from the happy results of our co-operation now, that we have a basis through the Central Road Rail Conference for further expansion on the same lines.

J. T.: It's impossible to prophesy as to the form which co-operation will take and how our task will be accomplished. Somehow it must and will be done. If we can work together now, why not in peace? But we must start planning now—there is no road back to yesterday and to-morrow begins to-day.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

CANADA

Railway Revenues in 1941

Operating revenues of Canadian railways during 1941 amounted to \$533,332,774, the second largest total revenues earned since, and only 4.6 per cent. below, those of the peak year of 1928. The increase over 1940 was \$108,511,877 or 25.5 per cent. Freight revenues were up by \$86,736,801 or 26.2 per cent., and passenger revenues by \$17,213,548 or 40.8 per cent. Operating expenses amounted to \$399,313,548, compared with \$331,592,246 for 1940 and \$427,976,704 for 1928, thus producing the highest net operating revenue on record of \$134,019,266. For 1928 this figure was \$120,040,637 and for 1940, \$99,930,887. The average monthly number of employees was 139,128, compared with 127,028 in 1940 and 176,871 in 1928. The total payroll amounted to \$239,697,218, compared with \$204,192,986 in 1940 and with \$276,938,388 in 1929, which was the highest figure ever attained. (These monthly operating data do not include some employees and payroll, not charged to operation, but included in the yearly reports. Moreover, some small railways do not report monthly.)

Canadian National Railways

Gross operating revenues of Canadian lines of the Canadian National Railways amounted in 1941 to \$261,826,874, against \$212,300,711 in 1940 and \$260,418,924 in 1928 (the previous peak earnings). Operating expenses were \$207,443,080, an increase over 1940 of \$31,724,514, but a decrease of \$10,337,094 from the 1928 figure; the operating income was increased from \$31,865,095 in 1940 to \$48,501,003. The United States lines showed an increase in operating revenues of \$7,323,390, raising the system revenue to \$304,376,778, against \$247,527,225 in 1940 and \$304,591,268 in 1928. Operating expenses increased from \$202,519,813 in 1940 to \$237,768,437, and operating income increased from \$35,964,408 in 1940 to \$55,626,577.

Canadian Pacific Railway

Gross revenues of the Canadian Pacific Railway increased to \$222,502,517 from \$171,535,474 in 1940, and were exceeded only by the 1928 figure of \$230,406,354. Operating expenses of \$158,655,358 were greater than those of 1940 by \$31,095,767, but less than those of 1928, and net operating revenues of \$63,847,159 were the largest to date. Operating income increased from \$35,639,439 in 1940 to \$45,957,535 in 1941, compared with \$51,694,452 in 1928.

UNITED STATES

Air-Conditioned Cars

Further progress was made during 1941 in the air-conditioning of passenger rolling stock. By the end of the year the total number of air-conditioned passenger cars had risen to 12,787, as compared with 12,200 a year previously. Of these cars 5,264 belong to the Pullman Company, which has added 25 to its previous stock, and 7,523 are owned by the railways, which have so equipped 562 more cars during 1941.

More New Locomotives

Additional to the locomotive-building programmes announced in recent issues, the Northern Pacific Railroad has placed orders, to a total value of \$6,500,000, for

ten 4-8-4 steam locomotives for mixed passenger and freight service with the Baldwin Locomotive Works, for twelve 4-6-6-4 articulated steam locomotives with the American Locomotive Company, and for three 5,400 b.h.p. diesel-electric freight locomotives with the Electro-Motive Corporation. The Denver & Rio Grande Western has ordered ten 4-6-6-4 articulated steam locomotives from the Baldwin Locomotive Works; and the St. Louis Southwestern is to build five 4-8-4 steam locomotives in its own shops. This continued investment by American railways in large and costly steam units, despite the severe diesel competition, is a striking feature of modern American locomotive power development. No fewer than 85 steam locomotives were ordered during February, and in addition 78 diesel-electric locomotives (ten 5,400 b.h.p. and five 4,050 b.h.p. freight units, two 4,000 b.h.p. fast passenger units, and the remainder shunting units of 1,000 b.h.p. and less), and five electric locomotives, or 168 in all.

A Massachusetts Railway Diversion

One of the important railway diversions made necessary by the nation-wide flood-water control schemes of the United States Government has been that of the Boston & Maine main line round the Birch Hill reservoir in Massachusetts. Although only 3.4 miles long, this diversion through rugged country, partly in consequence of the speed at which it was carried out, cost \$1,250,000. The reservoir is part of the control of the Millers River, a turbulent stream which has a record of considerable destruction in rainy seasons. The new line, 0.23-mile shorter than the old, had to be raised to a maximum of 35 ft. above the old level to provide a margin of 5 ft. above the highest possible level of the water in the reservoir, and this required inclinations of 1 in 204 to 1 in 167 for 1½ miles. The largest cutting is 2,000 ft. long and nearly 50 ft. deep, and required the removal of 180,000 cu. yd. of material, 100,000 cu. yd. of which was solid rock; No. 4 cutting also involved removing 145,000 cu. yd.; and the total excavation was 338,000 cu. yd. of earth and 144,800 cu. yd. of rock. The largest embankment is 3,500 ft. long, has a maximum height of 45 ft., and required 400,000 cu. yd. of material.

New Constructional Methods

The latest refinements in design and construction were incorporated in the carrying out of these earthworks and the construction of the road bed, in order to avoid slides, subsidences, and instability, with the result that it was possible to authorise full speed over the new line no more than 48 hr. after its opening for traffic. In constructing the embankments the material was placed in 12 in. layers, cambered for drainage, and each layer was thoroughly compacted by spreading and hauling equipment before the next layer was placed. An optimum moisture content was laid down for the material, and where moisture was present in excess, the particular area was scarified by zigzagging the bulldozers and turning them on short radii, so expediting the evaporation of the excess water and making it unnecessary to use rollers for compaction. Thorough and extensive sub-drainage systems were laid in, and berm or intercepting ditches, paved on all steep inclinations, were cut on the uphill side of all cuttings. The embankment slopes are inclined at 1½ to 1, and are completed by a 3 ft. layer of selected rock, underlain

by a 3 ft. layer of gravel and sand. The only bridge of major size is one of three 70 ft. plate girder spans over the Otter River. After completion of negotiations between the railway and the army engineers on August 5, 1940, about eleven months remained to establish the railway on its new alignment; plans and specifications were completed in 30 days, by September 4; the contract was awarded on October 4, and work was begun on October 7; and the new line was put in service on July 22, 1941, 9½ months after the ground was broken. For the first two days a restricted speed of 30 m.p.h. was in force, after which full speed was permitted.

ARGENTINA

Companies' Views on Higher Tariffs

That the Decree recently issued by the Argentine Government authorising the privately-owned railways to increase their passenger and goods tariffs by 5 and 10 per cent., respectively [see R.G., April 24, p. 502], will in no way alleviate the companies' financial situation and leaves the economic difficulties which beset them still unsolved is convincingly set forth in a communication on the subject addressed to the Minister of Public Works, Dr. Salvador Oria, by the representatives of the railways. The note points out that the higher tariffs will confer no benefits whatsoever on the railways, as all the tariffs cannot be increased in the way proposed, and the return of the wage-cuts and the additional contributions to the railway pension fund will absorb the whole of the extra receipts, which are problematical.

The note refers to the previous appeals which the companies have addressed to the Government specifying certain measures which they consider indispensable if their financial stability is to be secured and the efficiency of the services maintained unimpaired. Amongst these were:—

- A special exchange rate for their foreign remittances.
- A general increase in tariffs.
- A reform in the railway working rules and regulations, many of which are anomalous and antiquated.
- A minimum tariff for national Government transports.

Despite the urgency of all the measures specified, only one of them, that referred to under (b), has been granted. The note states that the Decree of March 5 last promises no relief to the companies, and moreover seems likely to aggravate their difficulties, as it contributes nothing towards the solution of the questions pending between the companies and their staffs as to the collective working agreements made in 1931 and interpreted by the Presidential Award of 1934; the increase ordered in the companies' contributions to the pension fund violates the principles laid down in the relevant law No. 10650.

Exchange profits

The note points out that, under the exchange profits system, the contribution made by the privately-owned railways since the financial year 1933-34 amounts to 90,155,000 pesos, and that made by the workmen may be estimated at 11,000,000. The concession of a special rate of exchange would partly solve their financial problems and also permit them to suppress the salary and wage retentions. The Decree rejects the request for a preferential rate of exchange on the grounds that it would be illegal. The companies state that, having on several occasions been accorded various rebates, granted in a discretionary manner, they have made a

fresh study of the question, but can find no law on which the rejection could be based. For this reason, they renew their appeal for this concession.

No Funds for Renewals

As the note states, it is impossible to maintain the railway property in the condition necessary to ensure safe and efficient working if the receipts are not even sufficient to carry out the repairs and renewals indispensable for the proper maintenance of the plant and equipment. In this connection, the companies invoke the principles of Argentine jurisprudence, as well as various decisions of the Supreme Court, in support of their argument that, by virtue of their concession laws, they are legally and constitutionally entitled to receive an adequate return on the working of their lines.

In conclusion, the companies protest against being charged with the expenses of the new committee referred to in article 5 of the Decree of March 5. In this connection, the note recalls that in 1934 a committee of financial experts was appointed by the Government to study the economic situation of the railways. The committee's report, issued in April, 1935, recommended a number of important reforms, of which, however, the only one which has so far been adopted is that relating to exchange. In May, 1940, the National Railway Board was instructed to conduct a fresh investigation, the report on which was completed and handed to the Government in the following year. But beyond supplying copies of the report to the companies and the railway unions, no action has yet been taken in the matter.

The companies now ask for the Decree authorising the increased tariffs to be amended on the following lines:—

1. The increased tariffs to be applied without earmarking the proceeds for any special purpose.
2. The existing special surcharge on tariffs to be raised from 5 to 7 per cent., in order to meet the companies' contributions to the pension fund, as established in article 9 of the relevant law.
3. The total or partial suspension of the wage retentions to be conditional on the amount of the increase in the receipts, in accordance with the Presidential Award of 1934.

BRAZIL

Estrada de Ferro Thereza Christina

Tenders have been invited for the electrification of this railway, which is situated in the southern corner of the state of Santa Catarina. The plans with which tenders must comply have been made by the technical staff of the Central Railway and include a thermo-electric generating station at Capivari which will burn the refuse from coal washing centres in Santa Catarina and provide energy for the mining regions of Cressiuma, Urussanga, and Lauro Muller, as well as for the railway. Electrification will be carried out from Imbituba to Laguna, along the coast, and also to the branch line terminal stations at Cressiuma, Lauro Muller, and Rio Deserto, a total distance of 221 km. The poor technical conditions of the line do not permit of speeds greater than 50-55 km.p.h. being contemplated, even after certain projected improvements have been made. The aerial-support system to be adopted is similar to that employed on the Rede Mineira de Vição between Barra Mansa, Andradina, and Angra dos Reis, that is to say, it will consist of timber uprights with

galvanised steel arms 50 m. apart in the tangents. Plans provide for the installation of sub-stations at Bifurcação (25 km. of the trunk line), at Esplanada (34.50 km. of the Cressiuma branch line), and at Santa Clara (35.70 km. of the Lauro Muller branch line). Ten locomotives of the 0-6-6-0 type have been ordered to meet initial requirements.

Fuel and the war

The present situation in Brazil as to imports of coal, oil, and petrol has led the Government to make technical arrangements which are already showing practical results, and the National Petroleum Council and the National Confederation of Industries have formed a special body to examine conditions relating to the supply and use of the various types of fuel. It is the duty of this body to indicate both the best use of local substitutes and a more economical use of imported fuels. One sub-commission has taken a census, and made designs, of all the boilers in the country, making it possible to ascertain exactly which industries are dependent on imported fuel-oil. Another commission, after analysing the information obtained by the first, is drawing up plans to adapt existing boilers to burn local fuel. Many boilers which up to the present have consumed oil will now burn charcoal emulsion, allowing of an economy of 30 per cent. Various industries are changing over from oil to firewood, and also to the consumption of ground cotton seed and of coal from Santa Catarina and Paraná. Work is being intensified on the extension of the Sorocabana Railway to the mining region of Rio de Peire in the latter state, to facilitate the supply of national coal to the industries of São Paulo. The railways, in general, are substituting firewood for imported coal, though some have adapted engine fireboxes and grates to the use of national coal. Where greater tractive effort is necessary, a mixture of national and foreign coal is being used, but on the majority of heavy-grade mountain sections, which are numerous in Brazil, no satisfactory substitute for Cardiff coal has been found yet. This has increased in price from 144 milreis a ton in 1938 to 210 in 1939, and from 235 milreis in 1940 to 280 in 1941.

Central Railway in 1941

At the close of last year Major Alencastro Guimarães, General Manager of the Central Railway, gave a short interview to representatives of the press and issued a brief outline of the results obtained by the railway during the first year of autonomous administration. (The granting of autonomy was reported in our August 29 and September 12, 1941, issues). Major Guimarães said that the Central Railway had not a single unpaid debt and that an economy of 170,000 contos had been effected between 1940 and 1941. Notwithstanding continued increases in the price of imported coal an economy of 50,000 contos had been made under that head alone. This had been brought about by greater consumption of national coal, and the results are shown by the following figures, which show also a serious waste of fuel in previous years:—

	Consumption of:	
	national coal	foreign coal
	Tons	Tons
1938 ...	58,076	586,148
1939 ...	98,649	530,300
1940 ...	110,691	435,712
1941 ...	150,260	276,126

Staff expenses had been reduced by 11,000 contos, principally by the dismissal of redundant employees.

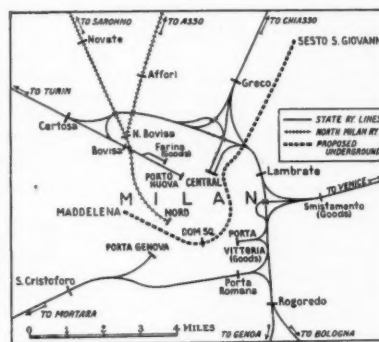
Receipts for 1942 were estimated at 400,000 contos and expenses at 381,740,

out of which some 100,000 contos were expected to be required for fuel and 107,000 for wages. The rest would be used for general maintenance so that any government grants might be devoted exclusively to the purchase of new material and to other improvements. These would certainly include modifications to the alignment of the Linha do Centro, and to the São Paulo branch line, technical improvements to which would be necessary if better train loadings were to be obtained. Passengers carried on the electrified section of the railway averaged 3,000,000 a month, compared with 500,000 a month when this service started. A total of 37 locomotives had been withdrawn from service as uneconomical, and this number would shortly be increased to 150, but the purchase of 5 electric and 20 steam locomotives was expected partially to make good the shortage.

ITALY

Underground Railway for Milan

The Milan City Council has approved the plans for the construction of an underground railway system. A beginning will be made with a central line from Sesto San Giovanni in the East end to the



suburb of Maddelela in the West end. This line will pass the Central Station, the Dom Square in the centre of the city, and the North Station; the section between these two stations is 2½ miles long. It has not been decided how far the line will go beyond each station (Sesto S. Giovanni is 4½ miles from the Central Station). It will be constructed mainly under main thoroughfares.

FRANCE

French National Railways

A 3½ per cent. medium-term (15 years) loan for fr. 5,000,000,000 was floated by the French National Railways in the middle of February and was nearly covered by the second day of subscription. The issue was at 96½ per cent. and bears interest as from June 1, 1942. The main purpose of the loan is the redemption of older medium-term loans, such as the 5 per cent. 1932 bonds (a balance of fr. 5,320,000) issued for a period of ten years. Owners of this stock with coupons to March 1, 1942, have been offered bonds of the new issue in exchange. Part of the proceeds will probably be used for the renewal and development programme which the French National Railways intend to proceed with in spite of the country's present economic condition. War damage sustained by the railway is stated to have totalled fr. 590,000,000 in 1939 and fr. 1,850,000,000 in 1940.

A NEW RAIL JOINT

Satisfactory results under heavy and fast traffic on the Southern Railway

IN all rail joints the ends of the abutting rails between the nearest supports and the expansion gap deflect under passing loads, and this gives rise to the pounding which is always experienced. Further, the fishplates do not develop the strength of the rail, and the consequences are that the impact of passing loads tends to make the sleepers settle on their beds, with the result that they need a good deal more attention than those in the remaining part of the track. Endeavours to distribute this increased pounding of the adjacent sleepers by means of wider timbers and larger chairs, although mitigating the trouble, do not abolish it, and if joints can be either eliminated or so designed that this increased pounding is removed, considerable economies in maintenance would be effected, and much smoother and quieter running provided.

The rolling of longer rails, or the welding together of standard lengths, in order to overcome this, has been experimented with on a fairly comprehensive scale, but it is found that the increased cost of the rolling or welding, the extra handling of rails entailed, and the enhanced cost of relaying with long lengths of rails is appreciable. A further point with the use of long lengths of rails is that the expansion gap at the rail extremities is considerably greater than with normal lengths, and ill-effects arise therefrom if ordinary joint fishplates are used.

A new type of joint has been recently designed by Mr. George Ellson, Chief Engineer, Southern Railway, to overcome the defects which are inherent in existing joints. The construction of the joint is quite simple, and with it the full strength of the rail is developed across the joint gap, while, owing to the spacing of the sleepers immediately adjacent to

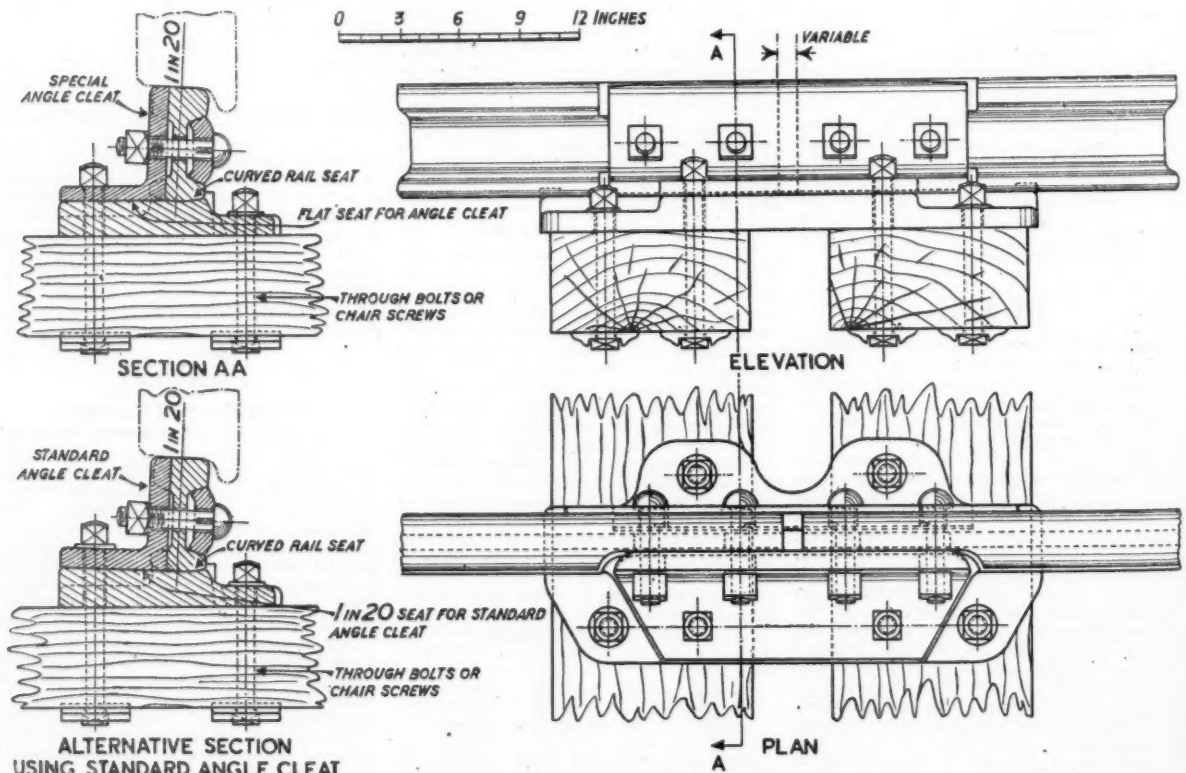
the joint being less than the normal spacing of the sleepers on the remainder of the track, the strength of the joint in the rail at that shorter span is relatively greater than that of the rail itself in the remainder of its length. The deflection of the rail at the joint is, therefore, less than at any other point, and further, as the wheel track is a continuous one over the joint gap, the knocking or pounding experienced at an ordinary joint is eliminated.

This is accomplished as follows:—

The ends of the two rails to be joined together are recessed on the outside as shown in the illustrations, for the reception of an angle bridging piece of rail quality steel which forms the outer fishplate, and a standard fishplate is used on the inner side. A cast-iron base plate takes the bearing of the rails and the angle fishplate, and thus the load is transmitted over the joint gap by the angle fishplate bearing directly on to the bedplate, assisted by the inner fishplate and the base plate itself. As these three elements develop the full strength of the rail across the space between the joint sleepers there is practically no deflection of the rail ends, and noise and pounding of the joint sleepers are eliminated.

The top edge of the angle fishplate is flush with the top of the rail, and in the joints now in use there is a slight tapering down of the top edge at the ends of these fishplates. The iron bedplate is secured to the sleepers by means of through bolts (or alternatively with coachscrews). In future designs the two outer holding-down bolts on the outside of the rail will be omitted.

Owing to the nature of the construction of the joint, creep of the rails is abolished, as the rail is prevented from moving longitudinally beyond the allowable limits of expansion by the fishbolts bearing on the angle fishplate, which in turn is secured by the through bolts to the joint sleepers, and thus any tendency of the rail to creep is taken up into the ballast between the sleepers. Further, due to the continuity of the wheel track across the expansion gap there is

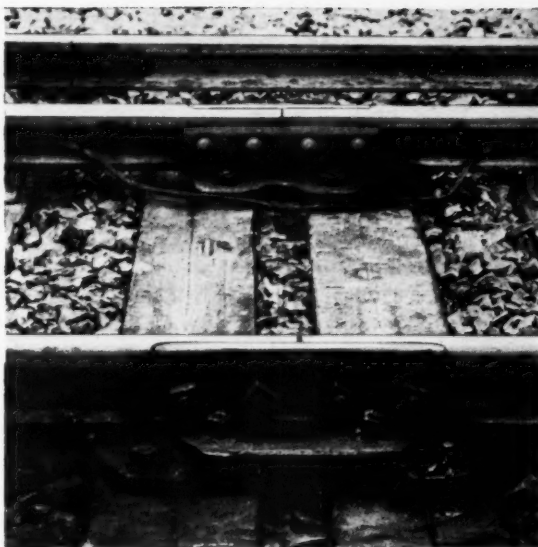


Elevation, plan, and section of new rail joint

no difference in the smoothness of travelling over the gap, or resultant detrimental effects on the sleepers nearest the joint.

A length of $1\frac{1}{2}$ miles of track equipped with these joints was laid in the down fast road between Horley and Gatwick Racecourse Stations in March, 1940, and a further $1\frac{1}{2}$ miles was laid in the London-Dover boat train route near Staplehurst Station in September of that year. At both these places it has been found that besides noise being eliminated at the rail joint, creep of the rails is abolished, and the sleepers nearest the joint require less packing than those further away from the joint.

The joint is, of course, applicable to either bull-head or flat-bottom rails. The photograph of the joints in the track was taken recently on the electrified section of line at Gatwick, and illustrates clearly how the wheels are carried across the rail gap.



Right: An example of the new type of rail joints which have been installed at selected points on the electrified track of the Southern Railway system

4-8-4 STREAMLINED EXPRESS LOCOMOTIVES, S.P.R.

*Built for operating the Daylight trains between
San Francisco and Los Angeles*

THE locomotive illustrated herewith is one of an order for 30 placed with the Lima Locomotive Works Incorporated, by the Southern Pacific Railway, U.S.A. The Daylight express trains for which the engines were built, operate over a distance of approximately 450 miles between San Francisco and Los Angeles, and a letter addressed to us by Mr. John D. Dickinson, assistant to the President of the contractor's firm, to whom we are also indebted for the photograph from which the illustration has been prepared, states that it was early in 1936 when this service was inaugurated; an order was then placed with the Lima Locomotive Works for six high-speed streamlined 4-8-4 locomotives; these were completed in December of that year, and were known as the "Daylights." Soon after these trains had commenced running, a report was issued in which it was stated that they were among the most popular trains in the world. This is indicated by the fact that during the six months' period ended September 30, 1937, the morning and noon trains carried a total of 275,959 ticket bearing passengers, an average of 1,508 persons a day. The popularity of the trains was attributed to their outstanding comfort, high speed, and punctuality.

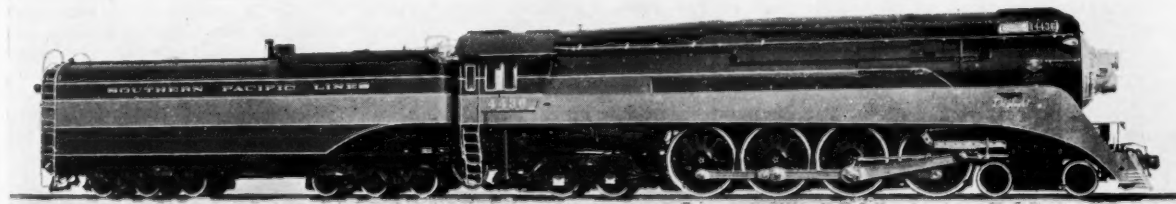
In December, 1936, fourteen additional engines were ordered by the Southern Pacific; these differed slightly in detail from the first six; the diameter of the driving wheels was increased from 6 ft. $1\frac{1}{2}$ in. to 6 ft. 8 in., and a boiler pressure of 280 lb. per sq. in. was adopted. The success of these loco-

motives prompted the railway company in July, 1940, to contract for 20 additional locomotives of the same kind, and in March, 1941, ten more were ordered; it is one of these that we illustrate.

In the period from March 21, 1937, the inauguration date, and June 30, 1939, 639,394 passengers were conveyed by the streamlined Daylight trains alone, and it has been found necessary to run extra sections almost daily to handle the increasing number of passengers. These Daylight locomotives are also employed by the owning company to work high-speed freight trains; in addition they are being used on the Sunset Limited between Los Angeles and El Paso, a distance of 814 miles; the engine runs through without a change. Some severe curves are encountered on this section. The locomotives are of considerable size and power as indicated by the following table of particulars:—

Cylinders, dia.	25½ in.
Piston stroke	32 in.
Wheels coupled, dia.	6 ft. 8 in.
Wheelbase coupled	21 ft. 6 in.
" engine	47 ft. 8 in.
" engine and tender	96 ft. 3 in.
Boiler diam., outside	7 ft. 2 in.
Length between tube plates	21 ft. 6 in.
Working steam pressure	300 lb. per sq. in.
Heating surfaces:	
Tubes	617 sq. ft.
Flues	3,885 sq. ft.
Firebox and combustion chamber	385 sq. ft.
Total (evaporative)	4,887 sq. ft.
Superheater	2,086 sq. ft.
Combined total	6,973 sq. ft.
Grate area	90.4 sq. ft.
Tractive effort	64,760 lb.
" (with booster)	77,760 lb.
Weight of engine in working order	212 tons 1 cwt.
Weight of tender (½ loaded)	140 tons 1 cwt.
Total	352 tons 2 cwt.

The tender is mounted upon two six-wheel bogies, and has a capacity of 5,880 gal. of oil fuel and 23,300 gal. water.



New Daylight streamlined 4-8-4 express engine for the Southern Pacific Railway

SPECIAL HORIZONTAL BORING MACHINES

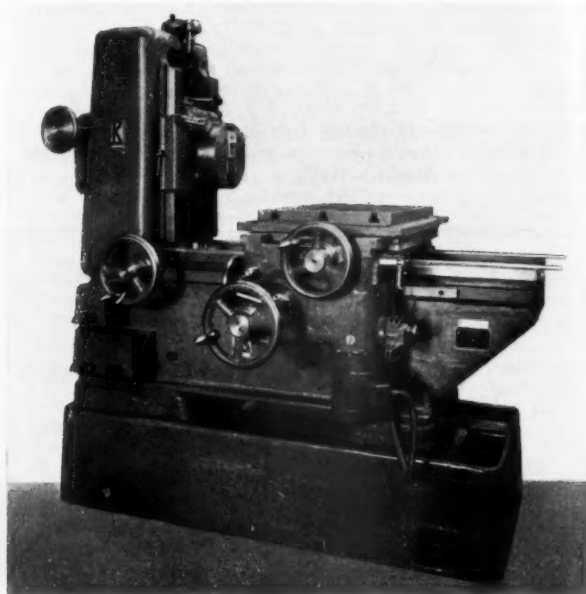
Designed for small work

THE smallest sizes of horizontal boring machines hitherto procurable in this country are frequently engaged the whole of their time on work for which they are larger and more complicated than is necessary. In order that such capacity may not be wasted, H. W. Kearns & Co. Ltd., of Broadheath, Manchester, has designed and built a new type of horizontal boring machine, considerably smaller than any yet available, and more efficient for work within its capacity. It has been specially introduced for the machining of all sorts of small

work. The machine is arranged to give a vertical traverse of 12 in., a transverse traverse of 12 in., and a longitudinal traverse of 24 in., the main table is 16 in. by 22 in. The facing chuck is arranged to face up to 8 in. dia. The nett weight of the machine is about 24 cwt.

When selecting work for the machine the following points should be borne in mind:—The machine is most suitable for high-speed cutting in cast iron, phosphor bronze, aluminium alloys, and, under some conditions, steel. No power feed is supplied to the vertical adjustment of the spindle slide, which can only be raised and lowered by hand. Both models are well adapted to carry out light milling operations. Screw-cutting operations are not possible.

The machine is easy to operate and is very suitable for



*Two types of horizontal boring machine made by H. W. Kearns & Co. Ltd. Left: The collet model
Right: The facing-chuck model*

components. Several machines of this design are already in service; production is now well established and comparatively favourable deliveries can be given.

The machine is built in two types and is known as the Kearns' S type horizontal boring machine. They are generally similar, but the one is a collet type, with a hollow spindle with collet mechanism for holding boring bars, drill sockets, etc., and the other a facing-chuck machine with solid spindle carrying an automatic facing chuck, 9 in. dia., with a reversible feed. The machine is arranged with built-in electric motors of the alternating-current change-pole type; the driving motor is $1\frac{1}{2}$ h.p., and the feed motor $\frac{1}{4}$ h.p.; it cannot be supplied with single-pulley drive or arranged for direct-current motor drive.

The following ranges of speeds are available, but we are asked to state that they must be specified at the time of ordering; the top range is applicable only to the collet model.

- (1) 80 to 1,000 r.p.m. 6 in number.
- (2) 40 to 500 r.p.m. "
- (3) 6.2 to 48 r.p.m. "

A choice of the following alternative feed ranges, which are independent of the spindle speed, may be made:—

- (1) 0.6, 1, 1.7 in. a minute.
- (2) 0.3, 0.5, 0.85 in. a minute.
- (3) 0.15, 0.25, 0.42 in. a minute.

It should be noted that fine feeds, independent of the spindle speed, when used in conjunction with high speeds to the spindle enable a very fine finish to be given to the

female or trainee labour. The chief controls are arranged as follow:—

Starting and stopping is by push-button.

The total range of speeds to the main spindle is controlled by one rotary switch and one lever.

Push-buttons start and stop the automatic longitudinal and transverse feeds to the table.

Changes of feed are obtained by one lever.

Feed to transverse or longitudinal motions is selected by one lever. These motions are interlocked and cannot be engaged simultaneously.

Each traverse is controlled by a separate hand-wheel. This feature will be found most convenient when unskilled labour is to be employed.

Various extras are available, including:—Square turntables up to 18 in. by 18 in. arranged to locate in rectangular positions, thus enabling work to be machined on four sides at one setting; circular tables with hand-operated worm and worm-wheel motion; three-jaw chuck, for holding jobs, to be mounted on the table; a boring stay, with the same vertical traverse as the spindle slide, bolted to the saddle of the main table water fittings with electric pump. The base of the machine is troughed to collect the coolant and tapping operations can be effected by means of the reverse to the main spindle.

Under test the machines have shown themselves entirely suited to the class of operations for which they were designed and will doubtless satisfy a long-felt want in engineering machine shops of many kinds.

RAILWAY NEWS SECTION

PERSONAL

G.W.R. APPOINTMENTS

The following appointments have been authorised by the board:—

Mr. A. Maynard to retire from the position of Chief Goods Manager due to ill-health on June 30.

Mr. F. W. Lampitt, Principal Assistant to Chief Goods Manager, to be Chief Goods Manager as from July 1.

Mr. C. Furber, Mineral Traffic Manager, to be Mineral Traffic Manager & Development Agent as from July 1.

The Minister of War Transport has been informed by the Appointing Trustees acting under the provisions of Section 1 of the London Passenger Transport Act, 1933, that they have reappointed Colonel Forrester Clayton to be a member of the London Passenger Transport Board for a further period of three years from May 18, 1942, and have appointed Mr. Geoffrey Heyworth to be a member for a period of five years from the same date, to fill the vacancy caused by the retirement of Brig.-General Sir Henry Maybury, G.B.E., K.C.M.G.

Mr. W. H. Morton, former General Manager of the Great Southern Railways Company, Eire, was presented, on May 28, with a portrait painting by Mr. Leo Whelan, R.H.A. Mr. Gordon Bradley, Law Agent to the Great Southern Railways Company, made the presentation.

L.N.E.R. APPOINTMENT

The L.N.E.R. announces that Mr. G. M. Johnston, Trains Assistant to Superintendent (Scottish Area) will act as District Superintendent, Edinburgh, in succession to Mr. A. Hill, who will shortly retire from the service.

The Council of the Institution of Mechanical Engineers has awarded its highest distinction, the James Watt International Medal, to Mr. A. G. M. Michell, F.R.S., of Melbourne, Australia. Mr. Michell is well known for his work on thrust and journal bearings and for his contributions to engineering science in connection with centrifugal pumps and crankless engines.

We regret to record the death, on May 25, of Mr. George Steven, at one time Secretary of the United Railways of the Havana & Regla Warehouses Limited, and subsequently Stores Superintendent of the Buenos Ayres Western Railway, and later of the B.A. Great Southern & Western Railways.

Mr. C. J. Selway has been entertained to luncheon by the officers of the London Passenger Transport Board, and presented with an engraved leather writing case on his retirement from the Chairmanship of the R.E.C. Passenger Committee.

Mr. F. W. Lampitt, Principal Assistant to the Chief Goods Manager, G.W.R., who has been appointed Chief Goods Manager from July 1, commenced his career on the Great Western Railway in South Wales in 1896, and after two years came to London where he saw service at the Victoria & Albert, Park Royal, and South Lambeth depots. In 1921, Mr. Lampitt was attached to the Chief Goods Manager's Office and figured with con-

spicuous success on a number of important staff commissions concerned with the re-organisation of the clerical and shed work of all the larger goods stations. In 1923, Mr. Lampitt was appointed Goods Superintendent at Bristol and, during his tenure of office there Temple Meads Goods Station was entirely rebuilt. After four years in the West of England, managerial promotion came to Mr. Lampitt in the most northerly district of the company's system, Liverpool, where his arrival synchronised with an outstanding revival in trade so far as the Great Western was concerned; in order to cope with the expanding traffic which accrued, the Birkenhead Goods Station had to be rebuilt and the cross-river traffic reorganised during his period of managership. Mr. Lampitt's next promotion was in May, 1931, when he was appointed Assistant to the Chief Goods Manager and Development Agent; this was followed three years later by his appointment as Commercial Assistant to the Chief Goods Manager. Very shortly after this appointment, Mr. Lampitt virtually inaugurated a new technique in outdoor railway representation when he delivered an outstanding lecture to the Great Western Debating Society. As Commercial Assistant, Mr. Lampitt devoted himself with conspicuous success to the establishment of new industries on the Great Western system. In particular, he quickly realised the urgent need for the re-industrialisation of South Wales and maintained close liaison with Lord Portal, the Special Areas Commissioner at that time, and the Nuffield Trust. Mr. Lampitt has been responsible also for the staff side of the Goods Department and for many years, both as Commercial Assistant and later as Principal Assistant, his strategy in the handling of the manifold problems (especially under war conditions) relating to staff matters has played an important part in the deliberations of the various Sectional Councils on which he represented the company. The direction of the company's Continental policy as to freight traffic also came within Mr. Lampitt's jurisdiction and in this connection he represented the company on the International Chamber of Commerce and the Anglo-American Chamber of Commerce; since Mr. Lampitt's appointment as Principal Assistant in October, 1941, he has been a member of the Chamber of Shipping and in recent months has been identified with the sub-committee appointed by that body to consider post-war shipping problems.



Elliott]

[& Fry

Mr. F. W. Lampitt

Appointed Chief Goods Manager, G.W.R.

INDIAN RAILWAY STAFF CHANGES

Mr. P. L. Lucas has been appointed to officiate as Traction Superintendent, G.I.P.R., as from December 5, 1941.

Mr. F. E. Musgrave has been appointed to officiate as Deputy Chief Engineer, Bengal & Assam Railway, as from January 2.

Rai Bahadur N. K. Mitra has been confirmed permanently as Chief Engineer, E.I.R.

Mr. S. F. Ahmed has been confirmed permanently as Deputy Chief Engineer, E.I.R.

Mr. H. A. Tuck, Deputy Chief Engineer, Signals, N.W.R., has been granted 10 months leave preparatory to retirement as from April 15.

INSTITUTE OF TRANSPORT COUNCIL

The following ordinary Members of Council will retire at September 30:— T. E. Argile, R. Carpmal, O.B.E., P. E. R. Graefe, D. H. Handover, D. C. Hays, C. J. Selway, C.V.O., C.B.E., T.D., C. Owen Silvers, Frederick Smith, Captain F. G. Spriddell, C.B.E., R.D., R.N.R. One Associate Member: R. Letch. To fill the vacancies created by the retirements, the council has nominated 3 representatives

of railway transport, 3 of road transport, 1 of docks, 1 of air transport, 1 other member, and 1 associate member, namely, Members: R. Birch (Deputy Chairman, Birch Bros. Ltd.), P. G. Stone Clark (Director, Southern National Omnibus Co. Ltd. and Western National Omnibus Co. Ltd.), C. G. G. Dandridge (Assistant Passenger Manager & Advertising Manager, L.N.E.R.), S. A. Dismore (Civil Liaison Officer, Ferrying, Air Ministry), Evan Evans (Operating Manager, Railways, London Passenger Transport Board), S. R. Geary (Operating Manager, Central Buses, London Passenger Transport Board), C. F. King (Traffic Manager, Bryant & May Limited), J. G. Merriweather (General Superintendent, Port of Preston Authority), A. S. Quartermaine (Chief Engineer, G.W.R.), Associate Member: J. R. Cowper (Assistant General Manager, Dundee, Perth, and London Shipping Co. Ltd.).

Mr. E. A. Webb, Resident Storekeeper, Locomotive & General Stores, Derby,



Mr. E. A. Webb

Appointed Resident Locomotive & General Storekeeper, Crewe, L.M.S.R.

L.M.S.R., who, as recorded in our May 8 issue, has been appointed Resident Storekeeper, Locomotive, Bridge & Station, Signal, Telegraph & Electric Stores, Crewe, as from June 1, joined the staff of the L.N.W.R. as Checkboy in 1902. At the end of that year he was transferred to the Locomotive Stores, and worked through the various sections until he was appointed Assistant Locomotive Storekeeper at Crewe in 1920. In 1931 he was appointed Resident Locomotive Storekeeper, Derby, and in 1934 became Resident Storekeeper, Locomotive & General Stores, Derby.

In our May 29 issue, in which reference was made to Mr. C. F. Havord's appointment as Resident Locomotive General Storekeeper at Derby, it should have been stated that in January, 1932, he became Assistant Resident Storekeeper, Locomotive, Bridge & Station, Electrical, Signal & Telegraph Stores, Crewe, and not Resident Storekeeper.

The Directors of Murex Limited announce that Mr. H. C. Green and Mr. F. C.

Mannox have been appointed Joint General Managers.

Major R. K. Hubbard, O.B.E., Assistant to the General Manager, Central Argentine Railway, has been appointed Assistant General Manager of the company as from May 1. Major Hubbard was born at Worthing, Sussex, in 1887. His transport career started in 1903 with his apprenticeship to the Thornycroft Steam Wagon Co. Ltd., afterwards merged into John I. Thornycroft & Co. Ltd., at Basingstoke, where he was trained in the design and manufacture of steam and internal combustion road vehicles, and gained experience with special designs of vehicles for the mechanical transport branch of the army. Later he held the appointment of Assistant Works Superintendent of Halley's Industrial Motors, Glasgow. On the outbreak of war in 1914, he received a commission in the mechanical transport branch of the Army Service Corps, and served in France as Officer in Charge of Stores at the Mechanical Transport Depot.



Major R. K. Hubbard, O.B.E.

Appointed Assistant General Manager, Central Argentine Railway

Rouen. He was three times mentioned in despatches during the war, and was made an Officer of the Order of the British Empire. After the war, Major Hubbard assisted in the reorganisation of road transport in the army, and held successively the appointments of Assistant Instructor, Mechanical Transport, Aldershot, Technical Staff Captain, War Office, Acting Chief Inspector of Mechanical Transport, India, and member of the Mechanisation Committee, Woolwich. He retired from the army with the brevet rank of Major in November, 1930, to take up the position of Deputy Stores Superintendent of the Central Argentine Railway; he became Stores Superintendent one year later, and was appointed Assistant to the General Manager in 1936. Major Hubbard is an Associate Member of the Institution of Mechanical Engineers, a Member of the Institution of Automobile Engineers, the Institution of Locomotive Engineers, and the American Society of Automotive Engineers.

We regret to record the death, at the age of 67, of Mr. H. A. Butcher, who retired in August, 1939, from the position

of Stationmaster, Newcastle Central, L.N.E.R., after 49 years' railway service. He began his railway career in August, 1890, as clerk at Fangfoss. He was afterwards transferred to the North Eastern Railway head office at York, and in 1899 became Personal Clerk to the then Superintendent of the Line, and later Assistant Yardmaster at York. He was then successively Chief Clerk to the District Superintendents at Leeds and York, becoming Assistant to the York District Superintendent in February, 1910. He was appointed Stationmaster at York in August, 1926, and in April, 1932, Stationmaster at Newcastle Central.

Mr. J. W. Starkey, Signal & Telegraph Inspector, Bolton, L.M.S.R., who, as recorded in our May 8 issue, has been appointed Area Technical Assistant, Signal & Telegraph Department, Chester, joined the staff of the North Staffordshire Railway Company in January, 1918, at Stoke-on-Trent, and served four years' apprentice-



Mr. J. W. Starkey

Appointed Technical Assistant, Signal & Telegraph Department, Chester, L.M.S.R.

ship. From 1922 to 1926 he assisted in the District Telegraph Assistant's office at Stoke-on-Trent, and then was transferred to Preston as Telegraph Inspector. In 1937 Mr. Starkey was appointed Signal & Telegraph Inspector, Bolton, and, on the retirement of Mr. Dear in November, 1940, he was appointed Acting Area Technical Assistant, which position was confirmed at the beginning of May.

We regret to record the death on May 21 of Mr. John Johnston, who had been since October, 1939, Factor, Scottish Area, London & North Eastern Railway.

Mr. W. M. Neal, Vice-President in charge of the western lines of the Canadian Pacific Railway, has been promoted to be Vice-President of the company and will move to Montreal, where he will be the chief lieutenant of the new President, Mr. D. C. Coleman. His place in charge of the western lines will be filled by Mr. W. A. Mather, lately General Manager of those lines.

TRANSPORT SERVICES AND THE WAR—142

Civilian Air Raid Casualties in April

The Ministry of Home Security has announced the following figures of civilian casualties due to air raids on the United Kingdom during the month of April:—

Killed (or missing and believed killed)...	938
Injured and detained in hospital ...	998

Details are as follow:—

	Men	Women	Children	Unclassified
Killed (or missing, believed killed) ...	359	446	122	11
Injured and detained in hospital ...	500	419	79	—

Railwaymen in the Forces

Many units of the Army are manned almost exclusively by trained men drawn from the British railways. Among them are the docks groups, the movement control units, and the railway construction companies of the Royal Engineers. Altogether 85,131 railwaymen had joined the Forces by the beginning of this year, and other skilled men had been transferred to the production of munitions and aircraft.

Women in Railway Service

To compensate for the loss of skilled men, the British railway companies decided in July, 1940, in agreement with the trade unions, to employ women in male wages positions. Since then 40,924 had been engaged as artisans, porters, electric truck drivers, engine cleaners, and ticket collectors, and in signal boxes, at the beginning of this year. There are also 27,453 women and girl clerks, of whom about 6,000 have replaced male clerks now in the Forces. In our issue of December 12 last (pages 620-2) we illustrated a number of the railway jobs in which women have taken the place of men.

Locomotives on Foreign Metals

In war conditions, locomotives are frequently loaned between the four main-line railways to handle exceptional traffics, and the dispatch of locomotives overseas was facilitated by the locomotive help given to certain railways by others whose engines were not commandeered. Economies in working have also led to the regular appearance of locomotives on foreign metals. A good example is the haulage of the daily leave train from Ashford (Kent) to Newcastle-on-Tyne by a Southern Railway engine as far as Banbury, where an L.N.E.R. locomotive takes over, thus obviating the provision of motive power by the Great Western Railway. Demands for engine power have led to the transfer of locomotives to

foreign metals for considerable periods. For example, 55 Southern Railway engines are at work away from their home ground—17 on the Somerset & Dorset joint line, 24 on the L.M.S.R., 12 on the G.W.R., and 2 on the L.N.E.R. The L.N.E.R. has a dock locomotive working on the L.M.S.R. and 28 freight engines on the G.W.R. The L.M.S.R. has loaned 40 freight tender engines to the G.W.R. The training of engine crews for emergency working over many foreign alternative routes in a large area served by the L.N.E.R. and L.M.S.R. was carried out during the early months of the war, and now every principal locomotive shed in the area has a long list of enginemen who are ready at a moment's notice to work trains over all these alternative routes.

Railway New Works

Since the beginning of the present emergency in 1938, much new railway construction has been carried out with the object of easing the interchange of freight, military, and passenger trains between the systems of the four main-line railways, and £6,000,000 has been spent on this work. It has included laying additional lines and sidings, enlarging shunting yards, building new bridges and strengthening existing bridges, and installing extra signalling and telephone equipment. The new loops, sidings, and running lines, and the improvement and enlargement of exchange junctions, have proved of great value not only in speeding up working but in facilitating diversions during repairs necessitated by enemy action. These diversions number in the aggregate many hundreds of trains carrying all classes of traffic. Examples of such new works recently described and illustrated in THE RAILWAY GAZETTE are the signalling at a junction between the G.W.R. and S.R. (January 9, 1942, issue, page 60), and the G.W.R. main-line quadrupling (March 20 issue, page 399).

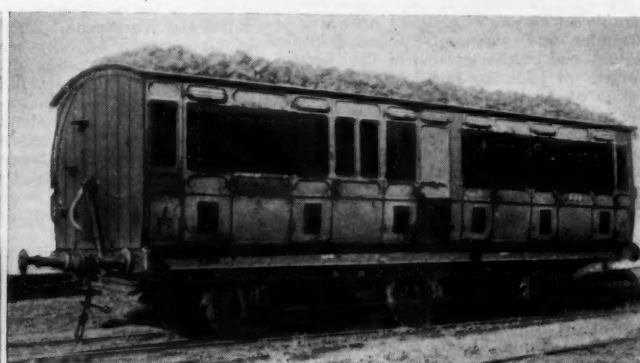
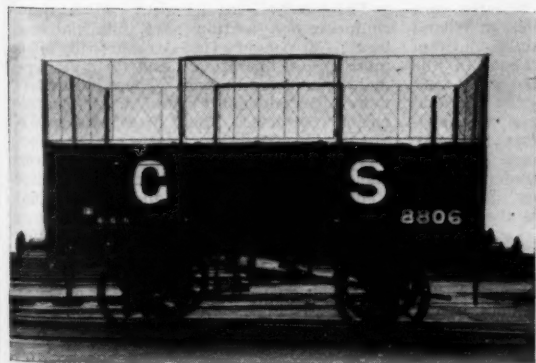
Derelict Newcastle Tunnel as Shelter

Before the outbreak of war in 1939 Mr. Percy Parr, the City Engineer & Town Surveyor of Newcastle-upon-Tyne, considered various schemes for the provision of deep shelters and found that a derelict mineral railway tunnel which runs under the City of Newcastle fulfilled the necessary conditions. The tunnel was not built as part of a public railway, but as a section of the Spital Tongues (or Victoria) wagonway which was begun on June 27, 1839, and took 2½ years to build. The tunnel was 2½ miles in length with a total descent

from the entrance at the colliery to the point of shipment of 222 ft.; it was worked by gravity on the downward journey and the empty wagons were drawn back by a stationary engine. The tunnel was a brick arch with a stone arch invert at the bottom, and had inside dimensions of 7 ft. 8 in. high by 6 ft. 3 in. wide, accommodating a single line of rails of 4 ft. 8 in. gauge. This line was opened throughout on January 8, 1842, and there was a formal opening ceremony on April 7, 1842. This tunnel, which passes underneath Town Moor and Barras Bridge, is 85 ft. beneath the surface at its greatest depth. Actually, the depth varies from 30 ft. to 85 ft. and for most of its length the cover on the tunnel is in excess of 40 ft. For many years past the tunnel has been disused, but the brickwork was found to be in reasonably good condition. Accordingly, it was cleaned thoroughly, a tarmac floor laid, and seating and electric light installed. Drainage is effected by open side channels led to existing sewers which, fortunately, passed under the tunnel about half way along its length and at its extremity. Entrances were provided at a number of points, and an effective shelter brought into use.

Turf Transport in Eire

The present state of emergency is responsible for a development in fuel production in Eire. Hitherto, practically all the coal requirements for household and factory were obtained from Great Britain. In recent years there has been a considerable expansion in the use of anthracite, which is being produced in increasing quantities from the Irish mines. The principal fuel development, however, has been in the production and use of turf, and this has created a problem for the Irish railways. Peat bogs occupy very extensive areas, and are mainly situated long distances from the cities. The transport of the turf by rail involves the use of a large number of wagons, and in order to secure better loading it was necessary to fit many hundreds of open wagons with cages so that the turf can be built up above the ordinary side level of the vehicles. One of our illustrations shows the type of superstructure adopted by the Great Southern Railways. This is constructed of steel wire, but crates of wood have also been fitted to a considerable number of vehicles. In addition, many old 30-ft. passenger coaches of the 6-wheel type have been converted, and are now employed to convey turf. The second illustration shows one of these vehicles laden with approximately 15 tons. These converted carriages are used only on trains composed entirely of similar vehicles, and vacuum brake control is maintained



Vehicles on the Great Southern Railways (Eire) specially adapted for the transport of turf fuel

throughout. The quantities of turf carried by rail are very considerable, and necessitate the provision of many special trains daily.

Kangra Valley Railway Closed

From March 8 the line between Nagrota and Joginder Nagar has been closed to all forms of traffic. The 68-mile section from Pathankote to Nagrota remains open.

Nushki Extension Railway

Further information has now come to hand from India concerning the railway from Spezand Junction (near Quetta) to Zahidan (Duzdap) on the Persian frontier. It appears that the dismantling of this line between Nok Kundi and Zahidan took place as recently as 1940. This section has now been relaid and the line was reopened for traffic throughout to Zahidan on April 22 last. Earlier reference to this railway was made at page 553 of our May 8 issue.

Dining Cars Withdrawn in India

On May 1 dining cars running on the following trains of the North Western Railway (India) were discontinued; these comprised the whole of the dining car service and there are thus no dining cars left running on the North Western Railway:—

No. 7 up and No. 8 down mails between Rohri and Lahore; one European and one Indian dining car

No. 7 up and No. 8 down mails between Karachi City and Kotri; European dining car service only

No. 9 up and No. 10 down mails between Karachi City and Rohri; European dining car

No. 3 up and No. 4 down frontier mails between Lalamusa and Rawalpindi; European dining car

No. 6 down Punjab Calcutta mail between Lahore and Jullundur City; European dining car

No. 7 up and No. 8 down are the Lahore-Karachi mails, No. 9 up and No. 10 down are the Karachi-Quetta mails.

Dr. Kleinmann

The announcement from Berlin on May 27 that Dr. Wilhelm Kleinmann, State Secretary in the German Ministry of Transport and Deputy General Manager of the Reichsbahn, "had asked to be relieved of his duties on account of ill-health" has been widely interpreted in the world press as having political significance. It is possible that, as in other spheres of German activity, there has been some failure to achieve the planned result, and that a responsible officer is made to shoulder the blame. Widespread failure of the German railway system, suggested in some quarters, must be regarded as another of the many examples of "wishful thinking." Speaking to a meeting of National Socialist propaganda leaders on March 10, Dr. Kleinmann maintained that, despite the shortage of labour and material, the severity of the winter, and the difficulties created by the transfer of German railway employees to serve in occupied territories, the German railway system had fulfilled the needs of the fighting forces.

Dr. Ganzenmüller, chosen to be Kleinmann's successor, is a direct associate of Himmler and was a friend of Captain Röhm, one of the victims of the "blood purge" of June 30, 1934. After the occupation of Austria he became President of the railway administration at Innsbruck, and since the beginning of the Russian campaign has been promoted to a senior administrative post in the railway system in the East.

Croat Scheme for New Waterways

The Croatian Government is credited with having devised a scheme for the development of new waterways. One of the canals to be built would connect the Danube with the River Drava. It would branch off from the Danube at Vukovar 167 km. (104 miles) to the west of Belgrade or somewhat to the south of the confluence of the Drava with the Danube, and run via Vinkovci to join the River Sava at

Slavonski Sâmač, 57 km. (35 miles) to the east of Slavonski Brod. The length of the canal would be 59 km. (37 miles), its width at the bottom 40 metres (131 ft. 3 in.), and the normal depth of the water would be 3 metres (9 ft. 10 in.). The two projected termini, Vukovar and Slavonski Sâmač, are 475 km. (295 miles) from one other by existing water connection, and it is the appreciable shortening of that distance which has caused the consideration of the canal, the cost of which would amount to 500,000,000 Kuna.

Polish Postal Buses

After the German invasion and occupation of Poland in the autumn of 1939 the Polish postal services were naturally disorganised, and up to the spring of 1940 the German postal services established in Poland were improvised to meet the needs of the moment. By the summer of 1940, however, the division of Poland (apart from that portion occupied by Russia) had been made, some portions being incorporated into the Reich and the balance or "Remainder States" being constituted into the General Gouvernement. In the last-named, which is the sole survivor for the time being of Poland as an entity, the Germans have established an organisation called the Deutsche Post Osten (German Eastern Postal Service) which issues its own stamps and has an autonomous management subject to the over-riding direction of the Reichspost. In accordance with the well-known German practice of arranging for the German Post Office to maintain many long-distance bus ser-

vices, similar bus routes have been established by the Deutsche Post Osten in the General Gouvernement. This class of service was formerly maintained in Poland chiefly by private operators, and to a limited extent by the Polish State Railways. In 1937, for instance, out of 921 long-distance motorbus services in Poland, only 34 were operated by the Polish State Railways, and the balance was in the hands of 261 private concerns. The well-developed system of Polish motorbus services resulted from the fact that various parts of the country were served but sparsely by the railways. Polish motorbuses "taken over" by the German Post Office form the nucleus of the bus fleet of the Deutsche Post Osten, which operates the services as a monopoly. The postal bus services for the conveyance of both passengers and mail are said to be worked mainly with the object of assisting the economic life of the country in the interest of the German war effort. The number of long-distance motorbuses in Poland was 1,436 at the end of 1937, of which 129 were owned by the Polish State Railways. The length of route operated amounted to 25,900 km. (16,100 miles), against 22,600 km. (14,050 miles) in 1936; of which 2,700 km. (1,677 miles) and 3,100 km. (1,926 miles) respectively were worked by the Polish State Railways. The number of passengers conveyed by these bus services aggregated 28,813,000 in 1937 (23,506,000 in 1936), including 3,061,000 (2,403,000) conveyed by the Polish State Railways buses.

The Railways of Poland Today

THE railway systems of Poland, both State and private, had a route length of 21,629 km. (13,440 miles) in 1937, of which 18,102 km. (11,248 miles) represented standard-gauge lines owned or worked by the Polish State Railways (P.K.P.), including the lines of the Franco-Polish Railway Company, while State-owned narrow-gauge lines totalled a route length of 2,143 km. (1,332 miles). Privately-owned railways aggregated a route length of 1,384 km. (860 miles). The creation of a unified national system out of the legacies of the period of partition formed the subject of an article at page 397 of our issue of September 22, 1939.

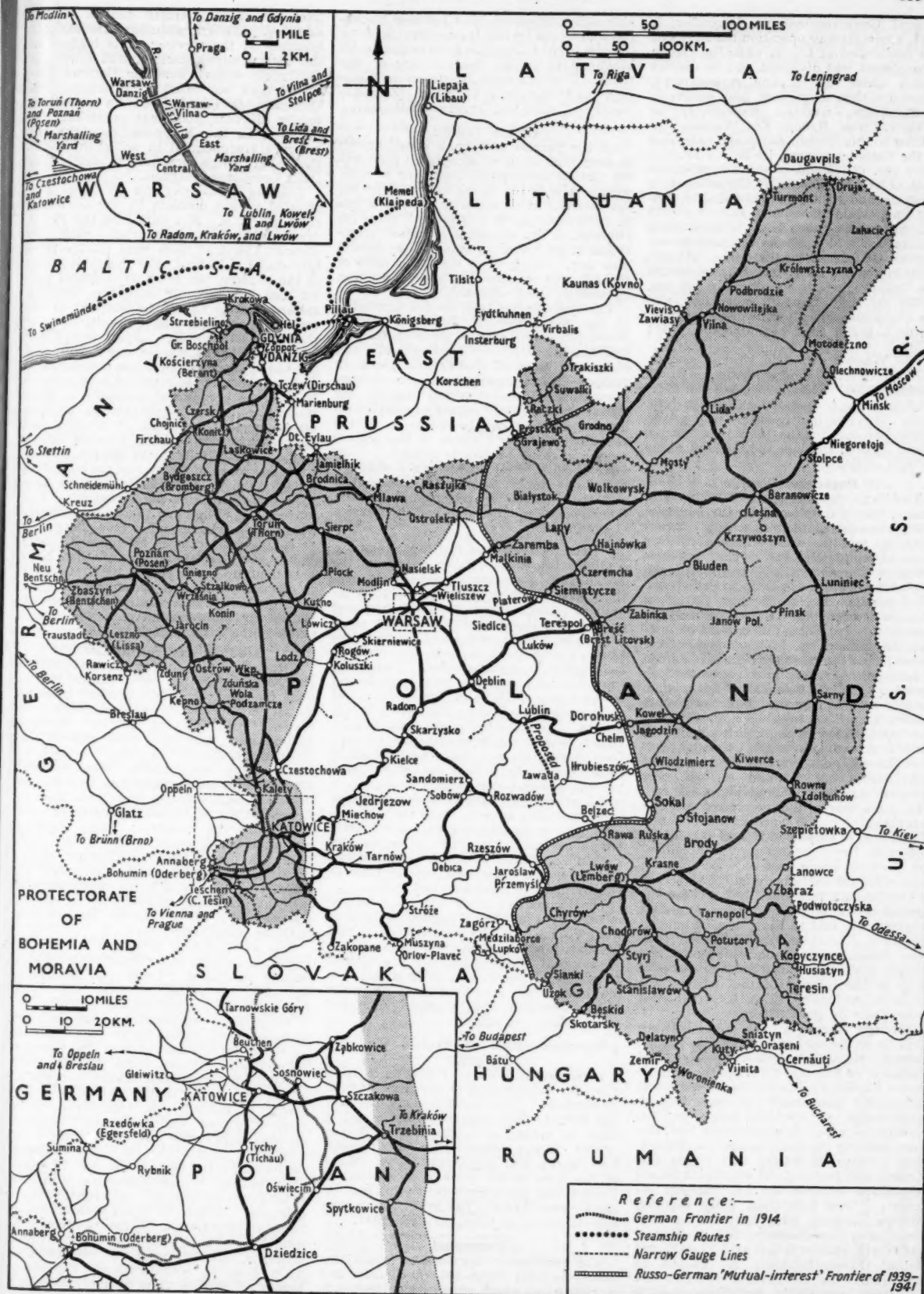
After the subjugation of western Poland by Germany in 1939, and the occupation by Russia of the eastern parts, the territory of Poland was once more divided. Various areas were incorporated into Germany, and the Russian parts were absorbed into the Soviet organisation. The German-annexed parts included Eastern Silesia, and the region to the north-west of Warsaw, now called the Warthegau. This left of Poland as an entity a territory mainly south of Warsaw, and including Krakow in the south-west, and Przemyśl in the south-east, which became known as the General Gouvernement. The extent of this territory is shown on the accompanying map. Last year, when the Russian Forces had retired from eastern Poland, under German onslaught, the railway system of Eastern Galicia was incorporated into that of the Ostbahn.

The railway system within the boundaries of the General Gouvernement was taken over by the Leiter der Abteilung Eisenbahnen im General Gouvernement in der Regierung des General Gouvernements (Chief of the General Gouvernement Section of Railways in the territory of the General Gouvernement) in accordance with a German decree issued on November 9, 1939.

These railways were given the official designation of Ostbahn (Eastern Railway), an organisation separate from the Reichsbahn, while their Leiter became President der General Direktion der Ostbahn (President of the Eastern Railway General Management). The holder of this office is Herr Gerteis, formerly a member of the Frankfurt-on-Main division of the Reichsbahn, and now also a member of the government of the General Gouvernement.

For working the former Polish State Railways in this "Remainder State," and supervising the privately-owned railways in the territory, a general management was established at Krakow, the newly-elected capital of the General Gouvernement, while the former management at Lodz (which the Germans now call Litzmannstadt, and which came to be situated outside the General Gouvernement), and the Krakow Traffic Section of the Reichsbahndirektion Oppeln (a temporary office established at the outset of the war), were dissolved.

The general management at Krakow comprises five sections: (1) financial and legal; (2) personnel and traffic; (3) locomotive; (4) operation; and (5) buildings, maintenance, and repair. There is furthermore an autonomous Prüfungsdienst (Examination Service). Four Eisenbahnbetriebsdirektionen (Railway Operation Managements) were established at first for the standard-gauge system, at Krakow, Lublin, Radom, and Warsaw; and two special offices were formed for the narrow-gauge lines, the Schmalspurnamt (Narrow-gauge Office) at Jedrzejów in western Poland (to the north of Krakow), and the Schmal-spurnebenamt (Narrow-gauge Sub-Office) at Hrubieszów in eastern Poland (to the north of Lwow), placed under the Radom and Lublin managements, respectively. As a result of the incorporation of the railway system of Eastern Galicia (previously held by the Russians) into the system of the



Railways of pre-war Poland, showing, tinted, territories absorbed in 1939 by Germany and Russia, and, untinted, the area Germany regards as the General Government of occupied-Poland

General Gouvernement on December 1, 1941, a new railway operation management was established at Lwow, while the Lublin management was dissolved and its district placed under the Radom management. There are thus at present four operation managements, situated respectively at Krakow, Lwow, Radom, and Warsaw.

Prior to this reorganisation and extension of the Ostbahn system, its length totalled 4,000 km. (2,485 miles) of standard-gauge lines, of which 2,500 km. (1,553 miles) were main line and 1,500 km. (932 miles) secondary line, while there were 600 km. (373 miles) of narrow-gauge line. When Eastern Galicia was added to the territory of the General Gouvernement, its railway system, 2,500 km. (1,553 miles) long, became part of the Ostbahn, which now totals 6,500 km. (4,038 miles) of standard-gauge line, and the above-mentioned narrow-gauge system, giving a grand total of 7,100 km. (4,411 miles).

The Warsaw suburban electric system, 107 km. (66 miles) long, operating on direct current of 3,000 volts fed through an overhead line, was re-opened for traffic in July, 1940. It is now jointly fed by an overland power line and by the Warsaw municipal power station, through the medium of six rectifier stations.

Passenger Traffic

The traffic problem of the Ostbahn is, of course, wholly dominated by the fact that the system is regarded as a link between Germany and the Russo-German fighting zone. Despite this, the civilian traffic is stated to be surprisingly high, although available passenger accommodation is below requirements. It is officially stated in German quarters that the Ostbahn has been unable to cope with the crowds of non-German passengers. This qualification seems to indicate that German nationals in Poland enjoy priority in respect of railway travel. Fares in Poland are lower than those in force in Germany, but may be considered as normal in connection with the purchasing power of the Polish population. With a view to preventing excessive overcrowding of trains, various measures have been tried, but without success. For instance, a temporary doubling of the railway fares was withdrawn after a short experimental period, and the introduction of a system of admission tickets in conjunction with travel tickets proved a failure, the Germans admit, not only because the extra work fell exclusively on the shoulders of the German personnel, but because the admission tickets (many of them forged, it is stated) are said to have soon become an object of "black-market" trade. However, the conveyance of professional and manual workers to and from their places of work in the interest of the German war effort is stated to have been achieved successfully by the Ostbahn.

Through carriages are run between Krakow on the one hand and Berlin, Vienna, Munich, Königsberg (East Prussia), and Budapest on the other. After the occupation of Eastern Galicia by the Germans, and subsequent conversion of the Russian broad-gauge to standard-gauge on the Cernauti—Lwow—Przemysl main line, this route became the line of main communication between Bucharest and Berlin (via Krakow and Breslau). It affords the fastest connection between the two capitals (41 hours). One fast train daily carrying Mitropa sleeping cars operates in each direction as from December 14 last. Bucharest North Station is left at 3.25 p.m. and Berlin (Friedrichstrasse) is reached at 8.51 a.m. In the reverse direction the departure from Berlin (Friedrichstrasse) is at 1.48 p.m., while the arrival at Bucharest North Station is timed for 6.52 a.m. An

alternative communication between Bucharest and Berlin by fast trains carrying sleeping cars of the Compagnie Internationale des Wagons-Lits avoids the territory of the General Gouvernement, operating via Budapest and through Slovakia (Zvolen—Vrutky—Cadca) and Oppeln and Breslau.

Goods Traffic

In the parcels and small consignments section, limitations of acceptance for varying periods are imposed from time to time, with a view to regulating the goods traffic. An increase in goods rates proved a less decisive influence in this respect, since the stimulus of the abundant monetary circulation in the country works in the opposite direction. The level of the goods rates of the Ostbahn is somewhat lower than that adopted by the Reichsbahn.

The Ostbahn has been elected a member of the Nordic-Central European-Oriental Rates Association (Nordisch-Mittel-europäischer-Orientalischer Tarifverband), and also of the Association of Central European Railway Administrations (Verein Mitteleuropäischer Eisenbahnverwaltungen), but German and railway circles say that "no definite decision can be taken as to the Ostbahn until the position of the regions to the east of Poland is settled." On December 20, 1941, the German through rates in use for transport between Germany and the General Gouvernement were extended also to the stations in Eastern Galicia.

Locomotives and Rolling Stock

Of the locomotives taken over from the Polish State Railways approximately one-third was stated by the Germans to be in need of repair. Germany is not prepared to add new locomotives and rolling stock to any appreciable extent, and the main problem at present is to keep the available locomotives in working order. Five works were originally available for the repair and maintenance of Ostbahn locomotives, and these were converted to the conveyor belt system. The inclusion of Galicia (previously held by the Russians) into the territory of the General Gouvernement added three more works, so that the Ostbahn now has eight locomotive repair shops, all of which are said to have been reconstructed and remodelled so as to make them "comparable as far as organisation and efficiency are concerned with those of equivalent size in Germany." Polish labour works under German supervision, on the basis of two Germans to every hundred Poles.

The locomotive stock has been supplemented by a number of engines taken over from France, and the present stock is said to consist of about 40 per cent. Polish 44 per cent. ex-German, and the balance French, ex-Russian and ex-Austrian. A few railcars are stated to be in operation on the mountain lines Krakow—Zakopane and Krakow—Krynica.

Reorganisation of Polish Wagon Works

According to a recent report from Warsaw, the Fahrzeugbau Gesellschaft m.b.H. of Warsaw (Vehicle Construction Company) has recently been established there with a view to taking over the Polish Wagon Works Lilpop, Rau, and Loewenstein. The works and equipment were seized at the time of the German occupation of Poland, and have since been exploited by the German Army. The new German firm is to take over as from August 1, 1941.

Personnel

The personnel of the Ostbahn is officially stated to total about 100,000 officials and workmen, of whom about 8 per cent. are said to be Germans from the Reich (*Reichs-deutsche*) or German nationals from coun-

tries now under German control (*Volks-deutsche*). The ratio varies with different branches of the service; it is highest in the central administration, and lowest in the repair shops where the German personnel does not reach 2 per cent. The Ostbahn has been placed on a footing totally different from that prevailing, for instance, in the Netherlands, where the railways are operated in accordance with the usual Dutch practice, though under strict German supervision.

Training of non-German personnel constituted a hard problem for the Germans, they maintain. Not only had the Polish personnel to be familiarised with the German service rules and instructions introduced in Poland after the subjugation of the country, but the 8,000 German railwaymen detailed all over the Ostbahn railway system had to be adapted to the technical and economic peculiarities of their new surroundings. Apart from those in the large towns, the German railwaymen are widely dispersed over the country, and to keep them at the required instructional level it has been found necessary to form them into groups which attend training classes mostly in what is termed the Zentralschule der Ostbahn (Central School of the Eastern Railway) at Makow, a small town due south of Krakow in the mountain range of the Western Beskids not far from the Polish-Czechoslovak frontier. The modern school building there was formerly a convalescent home and receives 200 pupils at a time; 58 courses attended by more than 1,200 German railwaymen had been held there up to the end of 1941. In what is officially termed a secondary building (*Nebengebäude*) close to the main school, classes for Polish railwaymen were instituted in the autumn of 1941.

Medical and Social Care

Although it is admitted that the general state of health of the Polish railwaymen is none too good, inasmuch as many cases of actual or suspected tuberculosis have been revealed through the routine medical examinations, the state of health of the German railwaymen in Poland is said to be generally satisfactory. The medical care for the railwaymen has had to be organised on a different basis from that in Germany, due to the lack of German civil doctors in the country. Army doctors are undertaking panel work for the Ostbahn. A special four-axle carriage, incorporating X-ray laboratory, examination room, etc., as well as living rooms for the medical personnel, is available to enable examinations to be carried out in the outlying parts of the territory.

The non-German personnel is said to enjoy the benefits of the Polish old-age and invalid insurance. These two insurance branches are stated to have developed rapidly in the General Gouvernement.

The welfare organisation of the Ostbahn includes arrangements for the development of social intercourse among the German railwaymen. Where there are at least 15 German railwaymen in any one place, a "railway social centre" (*Kasino-gemeinschaft*) is formed, and includes a radio receiver, games, and so forth. Isolated German railwaymen have to rely for their food and recreation on the canteens organised by the German Army. It seems clear that the German railwayman in Poland is far better off than his unfortunate Polish colleague. A German report states: "The rational distribution of the German personnel is not only a result of economic and technical considerations, but depends also upon political considerations; in every branch of service there is a dividing line above which only the German employee is admitted."

Questions in Parliament

Below are summarised Answers to Questions in Parliament affecting transport. The Minister concerned and the date of the Answer are given in parentheses

Speed of Road Vehicles

Steps have already been taken to reduce the speeds of all Royal Air Force vehicles on the roads with a view to extensive economies on petrol, oil, tyres, and upkeep. The permitted maximum speeds of Royal Air Force vehicles have been reduced, and vehicles may normally proceed only at the economical cruising speeds laid down for the various types of vehicles in use. (Sir Archibald Sinclair, Secretary of State for Air, May 20).

Engine Fires during Blackout

A recent case in which a driver has been fined for contravening the Lighting Regulations while removing an engine fire has been brought to the notice of the Minister of Home Security. The matter is being investigated and I will communicate with Mr. Sorensen. I am not aware of any other cases of a similar nature. It has been brought to my notice that the matter was considered by the Associated Society of Locomotive Engineers and Firemen, Walthamstow branch, but I am not able to trace any representations made to the Minister of Home Security from the trade union. (Mr. W. Mabane, Parliamentary Secretary, Ministry of Home Security, May 20).

Salvage Dump at Railway Siding

The dumping of valuable cardboard, paper, metal, and straw in large quantities at a railway siding near Swindon, has been investigated by the Ministry of Aircraft Production, the material in question having been despatched from an aircraft factory. The Minister of Aircraft Production is satisfied that the firm concerned have taken adequate steps to prevent a recurrence of the incident. (Sir Arthur Duncan, Minister of Supply, April 29).

Parliamentary Notes

Producer Gas

In the House of Lords on May 20 Lord Davies asked the Government whether its attention had been drawn to reports appearing in the press indicating the considerable extent to which the German authorities were developing the use of producer gas for military vehicles on the Russian front and elsewhere; whether those reports could be substantiated, and whether it had consulted the War Office and other appropriate departments with the object of ensuring the full use of propulsion in our military services.

Lord Croft (Under Secretary of State for War) said that the reports that the German authorities were developing the use of producer gas for military vehicles on the Russian Front could not be substantiated. The use of a proportion of producer-gas vehicles had been reported in other parts of Europe, probably, for vehicles for supply and administrative services. The Government had approved a scheme for the conversion of 10,000 new or existing civil vehicles to run on producer gas, using anthracite, and low-temperature coke as fuel. The use of producer gas for military and other vehicles, as a means of saving petrol, was being investigated by a Committee responsible to the Ministry of Mines. So far as the Ministry of Supply was concerned, the possible use of producer

gas in Army transport vehicles was considered some time ago; but in view of the several serious disadvantages as compared with petrol—for example, its power output was about 60 per cent. that of petrol, its engine wear about twice as great, and more servicing was required—it was decided not to adopt producer gas, but that developments by the Mines Departments would be reported, so that the matter could be considered from time to time. The Air Ministry was also carrying out experiments. The War Office would keep in close touch with those Departments with a view to ascertaining whether, and if so to what extent, conversion of Service vehicles was practicable.

Lord Davies asked whether this matter, which was formerly largely in the hands of the Ministry of Mines, was now in the hands of the Ministry of War Transport.

Lord Croft said the House would remember the statement which the Minister of War Transport recently made, but at

the same time other inquiries were going on and they were keeping in the closest touch with all Departments.

Indian Railway Bill

The Bombay, Baroda & Central India Railway Bill was read a Third time with the Amendments, and passed in the House of Lords on May 20.

Railway Companies Bill

The Railway Companies (Thos. Cook & Son Ltd. Guarantee) Bill was reported to the House of Commons on May 21, without Amendment, from the Committee on Unopposed Bills, together with a Report on the Bill. The Report was ordered to lie upon the Table, and to be printed.

London Passenger Transport Bill

The London Passenger Transport Bill was reported, with an amendment, to the House of Commons on May 21 from the Committee on Unopposed Bills. The Bill as amended was ordered to lie upon the Table.

British Non-Stop Runs in 1942

In the British summer timetables of 1942, which came into operation on May 4 last, there are 70 runs of passenger trains scheduled daily without intermediate stop over distances exceeding 100 miles; of these the L.M.S.R. is responsible for 47, the L.N.E.R. for 13, and the G.W.R. for 10. On Saturdays 11 further such runs are made regularly, on Fridays 8, and on Mondays 5. On the L.M.S.R. some of the most remarkable feats are due to the excision of stops by night trains at Carlisle Citadel Station. Several northbound trains which require examination or change of engine are dealt with there instead of at Kingmoor, 2 miles further north, and certain southbound trains stop similarly at Carlisle No. 12 instead of in the passenger station, thereby greatly relieving pressure on the limited platform accommodation. Nightly runs not stopping at Carlisle include those of the Night Scot in each direction between Crewe and Glasgow, 243.3 miles, and the northbound run of the wartime version of

the Royal Highlander from Crewe to Motherwell, 230.4 miles; these three journeys are of the more note in that very heavy trains have to be worked in succession over both Shap and Beattock, summits. Even longer than these, moreover, is the 301.1-mile non-stop run of the 8.40 p.m. Glasgow express on Friday nights from Euston to Kingmoor, the longest regular run in the world with any description of motive power; the L.M.S.R. also has three daily runs and two once-weekly runs that are all longer than any others in the world regularly made with steam power. The second portion of the Night Scot from Euston is of interest in that a run from Crewe to Kingmoor is followed by one over the Glasgow & South Western main line without a stop to Glasgow (St. Enoch), to relieve the Caledonian section; this is made possible by the water-troughs laid in recent years at Floriston and New Cumnock. The longest G.W.R. runs are still made by the Cornish Riviera Limited express between Paddington and Exeter, 173.5 miles, and the maximum L.N.E.R. effort is over the 124.4 miles between Newcastle and Edinburgh.

BRITISH NON-STOP RUNS EXCEEDING 100 MILES IN LENGTH
Summer, 1942

Railway	Between	Distance	No. of run		Fastest schedule		
			Daily	Not daily	Train	Time	Speed
L.M.S.R.	Euston—Carlisle (Kingmoor) ...	301.1	—	1 (a)	8.40 p.m. D (a)	Min.	M.p.h.
"	Crewe—Glasgow (Central) ...	243.3	2*	—	12.37 a.m. D	380	47.5
"	Crewe—Motherwell ...	230.4	1	—	10.43 p.m. D	338	43.2
"	Euston—Lytham ...	219.7	—	1 (c)	11.05 a.m. D (c)	312	44.3
"	Stockport—Euston ...	183.1	1	(b)	2.18 p.m. U	322	40.9
G.W.R.	Euston—Willeslow ...	176.9	1	—	5.40 p.m. D	227	48.4
L.M.S.R.	Euston—Crewe ...	173.5	2*	(c)	10.30 a.m. D	216	49.1
"	Euston—Stoke-on-Trent ...	158.1	10*	(d)	3.56 p.m. U	210	49.6
G.V.R.	Paddington—Taunton ...	145.9	—	1 (e)	9.50 a.m. D (e)	189	50.2
L.M.S.R.	Crewe—Carlisle (Kingmoor) ...	143.0	1	—	12.50 a.m. D	187	46.9
"	Carlisle (No. 12)—Crewe ...	142.7	2*	(c)	10.40 a.m. D	192	44.7
G.V.R.	Reading—Taunton ...	142.7	2*	(f)	1.23 p.m. D	170	50.4
L.M.S.R.	Crewe—Carlisle (Citadel) ...	141.0	15*	—	6.17 p.m. U (g)	181	46.7
"	Crewe—Watford ...	140.7	5	(g)	12.14 a.m. U	166	50.9
G.V.R.	Carlisle (No. 12)—Newport ...	139.6	2	—	3.55 p.m. D (h)	198	42.3
L.M.S.R.	Stoke-on-Trent—Watford ...	133.6	2*	(h)	11.03 a.m. U	162	49.5
L.N.E.R.	Newcastle—Edinburgh ...	128.5	1	—	11.12 a.m. D	151	51.1
L.M.S.R.	Carlisle (Citadel)—Stirling ...	124.4	3*	—	2.54 a.m. D	152	49.1
"	Carlisle (Kingmoor)—Glasgow (St. Enoch) ...	117.8	3*	—	4.09 a.m. D	154	45.9
"	Crewe—Bletchley ...	113.5	1	(c)	11.57 a.m. U	161	42.3
"	Carlisle (Kingmoor)—Larbert ...	111.4	1	—	2.04 a.m. D (k)	149	44.9
G.W.R.	Reading—Bath ...	109.8	—	1 (k)	11.15 a.m. D	140	47.1
"	Reading—Taunton ...	106.9	2*	—	2.18 p.m. D	130	49.3
L.N.E.R.	King's Cross—Grantham ...	106.7	2*	—	12.39 p.m. U	132	48.5
L.M.S.R.	Wigan—Carlisle (Citadel) ...	105.5	10*	—	12.24 a.m. D	127	49.8
"	Glasgow (Central)—Carlisle (No. 12) ...	105.2	2*	—	9.10 p.m. U	141	44.8
"	Carlisle (Citadel)—Glasgow (St. Enoch) ...	103.7	1	—	—	147	42.3

(a) Fridays. (b) Mondays, Fridays and Saturdays. (c) Saturdays. (d) Mondays, 1; Fridays, 3; Saturdays, 2; (e) Mondays and Saturdays. (f) Fridays, 1; Saturdays, 1. (g) Mondays and Fridays. (h) Fridays and Saturdays. (k) Mondays. * In both directions of running. D, Down. U, Up.

Notes and News

Trading with the Enemy.—The Board of Trade states that the whole of the Trading with the Enemy Department, with the exception of the Enemy Debts Registration Section which is still at New Oxford House, is now at 24, Kingsway, London, W.C.2. Telephone: Holborn 4300.

Eastern Bengal Railway Annuities.—In accordance with the provisions of the Act 47 & 48 Victoria Cap. cciv, it is notified that on March 31, 1942, a total sum of £964,739 was invested for the purpose of providing a sinking fund in respect of Eastern Bengal Railway Annuities, Class "B."

Rohilkund & Kumaon Railway Co. Ltd.—Payment will be made on July 27 of an interim dividend of 8 per cent. plus a bonus of 4 per cent., making a total distribution of 12 per cent., less tax at 6s., on the ordinary stock, compared with 8 per cent. (4 per cent. dividend and 4 per cent. bonus).

Rhodda Transport Co. Ltd.—This company, which is controlled by the British Electric Traction Co. Ltd., earned in 1941 a net profit of £23,460, compared with £21,709 in 1940. Dividend for the year is 9 per cent., tax free (same), and the amount to be carried forward is £8,973, against £9,024 brought in.

Census of Swiss Industries.—The Swiss Federal Statistics Bureau has published a first report on the census of Swiss firms taken in August, 1939. Railway employees had decreased in number to 31,220 from 36,610 in 1929, but workers in other transport services had increased from 13,934 in 1929 to 15,584 in 1939.

Permanent Way Institution.—By arrangement with Mr. W. K. Wallace, Chief Engineer, L.M.S.R., members of the Manchester and Liverpool Section will visit the following works at Newton Heath on Saturday, June 6, at 2.30 p.m.: the Concrete Depot, the District Engineer's Workshops, the Plant Depot, and the Bridge Shop.

Roumanian State Railways.—The yearly report of the Roumanian State Railways indicates that 8,500,000,000 lei have been spent on construction and repairs in Bessarabia and Bukovina. A comprehensive programme of work has been drawn up to cover the whole system and to be completed by 1945. It is divided into urgent work, estimated to cost 61,000,000,000 lei, and other work estimated at 36,000,000,000 lei.

Great Southern Railways (Eire).—For the 20th week of 1942 the Great Southern Railways (Eire) report passenger receipts of £30,712 (against £35,915), and goods receipts of £59,366 (against £47,951), making a total of £90,078 (against £83,866) for the corresponding period of the previous year. The aggregate receipts to date are passenger £643,038 (against £710,442), goods £1,213,000 (against £1,017,576), making a total of £1,856,038 (against £1,728,018).

Hants & Dorset Motor Services Limited.—This subsidiary of the Southern Railway Company and of Tilling & British Automobile Traction Limited earned in the year to March 31, 1942, a total income of £408,055, against £248,629. From this income deduct £342,892, including £52,473 (£45,000) for fuel, tax and vehicle licences, £5,378 (nil) for war damage contribution, £283,041 (£135,360) for income tax and E.P.T., and £2,000 (same) for fees, which leaves a net profit of £65,163 (£66,269). Preference dividend takes £9,750, and the

ordinary dividend for the year is again 9 per cent. tax free, requiring £47,500. Appropriations are the same, being £5,000 to reserve, and £1,750 to employees' bonus, and the amount to be carried forward is £23,591 (£24,427).

Canadian National Railways.—Gross earnings during April last were \$28,316,000, an increase of \$3,667,101 over April, 1941, and operating expenses were \$21,237,900, an advance of \$3,388,364, leaving net earnings \$278,737 higher, at \$7,078,099. Aggregate gross earnings for the four months from January 1, 1942, were \$107,939,000, an increase of \$18,591,634, as compared with the similar period of 1941, and the net earnings of \$22,303,258, showed an improvement of \$4,812,330.

Cost of Living Figures.—At May 1, the official cost of living index figure was 100 points above the level of July, 1914, as compared with 99 points at April 1. The rise in the figure was due to increases

of providing services which would not, apart from hostile attack or the danger thereof, be required to be provided by the undertaking.

Buses in Netherlands Indies.—Motor buses were introduced in the Netherlands East Indies in 1907, and the Public Works Department instituted services for conveying mails and a few passengers at special fares. It is of interest to note that by 1912 one of these services extended right across Sumatra, 1,074 km. (667 miles). In 1917 the State Railways took over these

British and Irish Railway Stocks and Shares

Stocks	Highest 1941	Lowest 1941	Prices	
			May 29, 1942	Rise/ Fall
G.W.R.				
Cons. Ord.	43½	30½	44½	+ 1
5% Con. Pref.	109½	83½	111½	+ ½
5% Red. Pref. (1950) ..	105½	96½	108	—
4½% Deb.	113½	102½	111½	—
4½% Deb.	115	105½	113½	—
4½% Deb.	121½	112	121½	—
5% Deb.	132	122	133	— 2
2½% Deb.	70	62½	73	—
5% Rt. Charge	129½	116	132½	—
5% Cons. Guar.	128	110½	129½	+ ½
L.M.S.R.				
Ord.	17½	11	19½	—
4% Pref. (1923)	53	33½	55	+ ½
4% Pref.	68½	48½	72½	— ½
5% Red. Pref. (1955) ..	97½	77	100½	—
4% Deb.	105½	97	106	—
5% Red. Deb. (1952) ...	110½	106½	109½	—
4% Guar.	100	85½	101½	+ ½
L.N.E.R.				
5% Pref. Ord.	3½	2½	3½	—
Def. Ord.	2	1½	1½	—
4% First Pref.	52½	33	54	+ ½
4% Second Pref.	19½	10	21½	—
5% Red. Pref. (1955) ..	79½	52	89	—
4% First Guar.	90½	74½	94½	+ ½
4% Second Guar.	80½	59	87½	— ½
3% Deb.	79½	68½	81	+ ½
4% Deb.	104	91½	105	—
5% Red. Deb. (1947) ...	106	102½	104	—
4½% Sinking Fund Red. Deb.	103½	99½	103½	—
SOUTHERN				
Pref. Ord.	65½	43½	64½	— ½
Def. Ord.	15½	9	15½	—
5% Pref.	107	77½	109½	— ½
5% Red. Pref. (1964) ...	107	89½	108½	—
5% Guar. Pref.	128	111	129½	+ ½
5% Red. Guar. Pref. (1957) ..	114½	107½	114½	—
4% Deb.	112	102½	109½	+ ½
5% Deb.	130½	119	132	— 1
4% Red. Deb. (1962-67) ..	108½	102	109½	+ 1
4% Red. Deb. (1970-80) ..	108½	102½	109½	—
FORTH BRIDGE				
4% Deb.	99½	90½	104½	+ 1
4% Guar.	99	85½	104½	—
L.P.T.B.				
4½% "A"	120½	109½	119½	—
5% "A"	130½	115½	129½	+ ½
4½% "T.F.A."	103½	99½	102	—
5% "B"	117	102	116½	—
5% "C"	46½	28½	40½	—
MERSEY				
Ord.	24½	19½	21½	—
4% Perp. Deb.	100	90	100	—
3% Perp. Deb.	73½	63	78	+ 1
3% Perp. Pref.	58	51½	58	—
IRELAND BELFAST & C.D.				
Ord.	4	4	9	—
G. NORTHERN				
Ord.	14½	3	21	—
G. SOUTHERN				
Ord.	14½	5	21	—
Pref.	17	10	16	— 1½
Guar.	44	16	38	—
Deb.	61	42	68	—

TECHNICAL PAPERS

The following letter was published in The Times of May 29:

TO THE EDITOR OF THE TIMES

Sir,—I am a district nurse and midwife who, for 20 years, has regularly read the leading nursing journal and recently, in the interests of economy, have shared it with colleagues in the same area. On taking up a new appointment in another part of the country I learn that the journal is unobtainable from any newsagent and on application to the proprietors I find they cannot supply me. I am thus prevented from keeping in touch with current developments in my profession at a time when the bookstalls continue to afford me quite a wide choice of ephemeral journalism. Cannot the paper controller reconsider the needs of readers of professional and technical journals?

I am, Sir, your obedient servant,

D. INKPEN

Red Roof, Quakers Lane,
Potters Bar, Middlesex

in the prices of tobacco and cigarettes as a result of the additional duties provided for in the Budget. For food alone the index figure at May 1 was 60 points above the level of July, 1914, the same as at April 1, and there was little change on average in the prices of other items covered by the statistics.

Ransomes, Sims & Jefferies Limited.

—Accounts for the year 1941 show a net profit, after providing for E.P.T. and income tax, also after writing off A.R.P. expenditure to date, of £77,401 (£85,142). Adding £55,723 brought forward gives a total of £133,124. Preference dividend takes £11,000, and the directors propose to transfer £30,000 to reserve for post-war reconstruction and contingencies, and again to pay a dividend on the ordinary stock of 7½ per cent., less tax, leaving £55,624 to be carried forward.

Greenock Port & Harbour Order.

The Minister of War Transport on May 13 made the Greenock Port & Harbour Consolidation Act, 1913 (Relaxation), Order, 1942 (S.R. & O. 1942, No. 913). This Order relaxes the obligations and limitations in connection with borrowing powers imposed upon the Greenock Harbour Trustees by or by virtue of any Act or other instrument determining their functions to such extent as to enable them to borrow a sum not exceeding £38,000, for the purpose of meeting that part of the cost to be borne by them of taking measures for the due functioning of their undertaking and for securing that the undertaking is capable

OFFICIAL NOTICES

Rio Tinto Company Limited

DIVIDEND ON SHARES TO BEARER

HOLDERS OF SHARE WARRANTS TO BEARER are informed that they will receive PAYMENT of the DIVIDEND declared at the General Meeting held on the 22nd inst., at the rate of Two Shillings and Sixpence per Share on the Preference Shares, less Income Tax, on and after Monday, the 8th June, 1942, on presentation of Coupon No. 90 on the Preference Shares at the Company's TRANSFER & COUPON Office at Elm Grove, Kingsclere, Near Newbury, Berks.

Coupons for payment must be left six clear days previously for examination, and may be deposited forthwith.

By Order,
J. DAVIDSON,
Secretary.

Offices of the Company:
11, Old Jewry, London, E.C.2.
22nd May, 1942.

bus services and have progressively augmented them, beginning their own routes in Java in the next year. The great competition from private vehicle owners has compelled most, if not all, the private railway and tramway concerns to introduce buses, and in many cases lorries for the conveyance of goods.

South Indian Railway Co. Ltd.—Announcement is made of an interim dividend on the ordinary stock of 1½ per cent. (nil from surplus profits and 1½ per cent. guaranteed interest) less income tax, on account of the year 1942.

Maidstone & District Motor Services Limited.—This subsidiary of the Southern Railway Company and of Tilling & British Automobile Traction Limited (jointly) reports for the year to March 31, 1942, that, after providing £560,152 for expenses, £349,038 for duties, licences, rates and taxes, and £75,484 (£73,916) for depreciation and renewals, it is proposed to place £20,000 to reserve (same) and pay a final dividend of 5 per cent. and a bonus of 1½ per cent. on the ordinary (making again a total of 11½ per cent. for the year), and to carry forward £35,356 (£34,195).

The Highest Double-Deck Bridge.—What is believed to be the highest double-deck bridge in the world, a structure spanning the Pit River Canyon above the Shasta Dam site in California, was placed in service towards the end of March when it was traversed by a southbound Southern Pacific goods train with a special car at the rear carrying an inspection party including officials of the Southern Pacific Railroad and representatives of the U.S.A. Bureau of Reclamation. All passenger trains, and southbound freight trains, previously routed over the railway company's Sacramento Canyon line have been transferred to the new route. The Sacramento Canyon line will cease to be available shortly, as it is to be flooded by Shasta Dam water.

Producer-Gas Buses for London.—At the beginning of the war, London Transport carried out some experiments, at the request of the Government, with producer-gas plant with a view to saving petrol, but the operating results were not conducive to converting vehicles for the arduous service in the Metropolis. Because of the exacting fuel situation and the technical developments in the meantime, London Transport is now introducing producer-gas plant with 60-seat petrol-engined double-deck buses, and part of its fleet operating from the Grays depot will be running on producer-gas very shortly. Plant is of the Govern-

OVERSEAS EMPLOYMENT: Applications for the undermentioned appointments in the service of the Government Railways, West Africa, are invited:

(1) **CIVIL ENGINEER:** Candidates must be Corporate Members of the Institution of Civil Engineers or hold an Engineering Degree and have had practical experience on a British and/or Foreign Railway. Salary: £475 to £840, according to experience.

(2) **ASSISTANT LOCOMOTIVE SUPERINTENDENT:** Candidates must have served a pupillage or apprenticeship in the Workshops of a British Railway or with a firm of locomotive builders and should be Associate Members of the Institution of Mechanical Engineers or hold an equivalent qualification. Salary: £475 to £840.

(3) **SENIOR TRAFFIC OFFICER** for Port Traffic Working: Specialised docks and railway operating experience. Salary: £720 per annum.

(4) **TRAFFIC INSPECTOR:** Good all-round training on a British Railway and experience on inside and outside work, preferably in operating and

commercial departments. Salary: £400 rising to £560 p.a.

Period of Engagement: One tour of 12 to 24 months, or the duration of the war, whichever is the shorter period. Free passages and free quarters. Separation allowances for married men whose salaries are less than £600 p.a.

Applications in writing, giving full details of training and experience, and name of present employers, should be made to The Secretary, Overseas Manpower Committee (Ref. 282/b), Ministry of Labour and National Service, Hanway House, Red Lion Square, London, W.C.1.

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is 9.30 a.m. on the preceding Monday. All advertisements should be addressed to:—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

ment emergency type, modified by the adoption of the Tilling water filters. For the moment 20 buses are being converted; the first of these vehicles was demonstrated on Tuesday, by Mr. W. A. C. Snook, Chief Engineer (Buses & Coaches).

Agreed Charges.—Fifty further applications for the approval of agreed charges under the provisions of Section 37 of Road & Rail Traffic Act, 1933, have been lodged with the Railway Rates Tribunal. Notices of objection must be filed with the Registrar on or before June 16.

Southern Railway Mixed Traffic Electric Locomotive.—At the conference of the Associated Society of Locomotive Engineers & Firemen, held at Edinburgh on May 30, it was stated that the society had made representations to the Southern Railway with a view to securing that the new mixed traffic electric locomotive should be manned by two men instead of one, in view of the size of the locomotive.

Scottish Motor Traction Co. Ltd. Capital Reduction.—A circular to stockholders refers to the directors' intention that as soon as possible the capital of the company be reduced by the return to ordinary stockholders of 5s. on each £1 unit of stock held. The necessary resolutions for a reduction of capital by the subsidiaries W. Alexander & Sons Ltd. and Central S.M.T. Co. Ltd. have been duly passed and confirmed by the Court, so that the way is now open for the action proposed. Accordingly, an extra-ordinary meeting will be held on June 17 to consider a resolution giving effect to the proposed return to ordinary holders of 5s. on each £1 unit, and also one increasing the capital to its present nominal amount of £2,750,000.

Southampton Dock Charges Order.—The Minister of War Transport made, on May 16, the Southern Railway—Southampton Docks (Increase of Charges) Order, 1942. It authorises an increase of 10 per cent. in rates and charges authorised by the second schedule to the Southern Railway Act, 1923, namely:—(i) on merchandise imported and landed, with the exception of the wharfage due (when the import rate is not payable) and the overside rate; (2) on bonding rates and charges for wines and spirits, with the exception of charges for rent, agency, etc.; (3) on wood, including dock haulage, with the exception of charges for rent and the overside rate; (4) on merchandise for shipment, with the exception of the wharfage due and the overside rate in certain cases; (5) in the rates, charges, and rents on grain, seed, and flour

imported, with the exception of charges for warehouse rent.

Wartime Painting of G.W.R. Engines and Coaches.—Austerity is very much in the public mind at present, and it is clear that we bear restrictions with fortitude, if not good cheer, when satisfied that they are required in the national interest, and not for austerity's sake. Railway travellers, therefore, will accept in this spirit, if perhaps with a touch of sadness, the gradual disappearance of the familiar coloured engines and passenger coaches on the Great Western Railway. Due to difficulties associated with shortage of staff, and materials, and the necessity for overtaking arrears of repainting work, the company has decided that for the duration of the war its engines, other than those which are employed on express passenger trains, shall be painted black, instead of the familiar green and gold, as they pass through the shops for general overhaul. In addition, as further supplies of cream paint are now unobtainable, passenger-carrying vehicles will be painted brown, including the roofs, with the exception of the Riviera stock and special saloon and diesel cars, which will retain the familiar chocolate and cream colour.

A Moorland Fire.—Gatehouse-of-Fleet is a wayside station in the wilds of Galloway and in the centre of a huge moorland country. On a recent Sunday afternoon the Stationmaster, who was off duty, noticed that fire had broken out on the moor some three miles distant. Accompanied by a friend he immediately proceeded to the spot. They found that a number of sheep and lambs had been practically surrounded by the fire and with great difficulty they rescued the animals. As it was obvious that the fire could not be controlled without assistance, the Stationmaster returned to the station and a party was quickly organised—including members of the Local Home Guard and a number of school-boy evacuees. By means of an Engineering Department ballast train additional members of the Home Guard were brought from neighbouring villages, and ultimately about 100 men were fighting the fire, which was extinguished after some hours. About 100 acres of moorland were burned. But for the prompt action of the Stationmaster and the valuable work done by the volunteers, the damage to the moorland would have been very much more extensive and probably many sheep and lambs would have been lost.

Railway Stock Market

The war news had a beneficial influence on sentiment in Stock Exchange markets earlier in the week, and in most sections values showed an upward trend. There was, however, virtually no improvement in the general volume of business, but all classes of securities remained firmly held, and consequently there was again a tendency for quotations to respond strongly to very moderate demand. Home railway prior charges, which over a lengthy period have been attracting attention on their first-class investment merits, are in some cases in small supply in the market. They are likely to continue to be firmly held because yields still compare favourably with those on other high-grade investment stocks. On the other hand, home railway junior stocks are in good supply, unlike many of the higher-yielding industrial and other shares offering large yields. At the time of writing, home railway securities have not shown a general response to the better market conditions, but there were a number of gains on balance; sentiment had benefited from talk of the possibility of improvement in the half-yearly dividend decisions on some of the junior stocks. This view is not generally held, and although it is believed that revenue is running well above the excellent rate which ruled last year, there is unlikely to be any impor-

tant increases in the total dividends, bearing in mind that dividend payments are, in effect, conditioned by the terms of the financial agreement. The view in some quarters is that the interim on Great Western ordinary may be improved from 1½ per cent. to 2 per cent., and that there would seem to be reasonable possibilities of interim payments on L.M.S.R. ordinary, and perhaps also on Southern deferred and L.N.E.R. second preference. There has been increased attention given to foreign railway securities. Mexican Rails were active on the declaration of war on the Axis Powers, and at the time of writing the 6 per cent. debentures have risen to 17. Among South American issues, the main feature was provided by Leopoldina debentures, following the declaration of a full year's interest payment. The higher interim payments announced by two companies have been followed by an upward movement in Indian railway stocks.

Great Western ordinary, which tended to be influenced by talk of a higher interim dividend, provided the best feature among home railway issues, and has improved on balance from 43½ to 44½. On the other hand, Great Western 5 per cent. preference had an easier appearance at 111½. L.M.S.R. ordinary at 19½ was fractionally lower as compared with a week ago, but at the time of writing the 1923 preference has gained a point to 55, and

the senior preference was half-a-point better at 73. L.M.S.R. 4 per cent. debentures were 106, and the guaranteed stock 101½, both of which would appear to give not unattractive yields bearing in mind their investment merits. There was a better tendency in L.N.E.R. first preference which was fractionally higher at 54, and the second preference was better at 21½. L.N.E.R. second guaranteed was 86, and the first guaranteed 95. Among Southern issues, the preferred at 65 was fractionally lower, and at 15½ the deferred was little changed on balance. Southern 5 per cent. preference was 109½, and the 4 per cent. debentures 109. London Transport "C" was again 40½.

Among foreign railway stocks, San Paulo has further improved from 50 to 53½, and Leopoldina debentures were 47½; there was a little speculative activity in the preference and ordinary stocks of the last-named company. Argentine railway stocks had a less active appearance than those of Brazilian companies. B.A. Gt. Southern 4 per cent. debentures were 58, but elsewhere, Central Argentine 4 per cent. debentures eased slightly to 35½. B.A. Western debentures were 49½. B.A. & Pacific issues were better, as were Argentine North Eastern "C" debentures. In other directions, United of Havana debentures again moved better. Among Canadian Pacific issues debentures and preference stock tended to improve.

Traffic Table and Stock Prices of Overseas and Foreign Railways

Railways	Miles open 1941-42	Week Ending	Traffic for Week		No. of Weeks	Aggregate Traffic to date			Shares or Stock	Prices			
			Total this year	Inc. or Dec. compared with 1941		Totals		Increase or Decrease		Highest 1941	Lowest 1941	May 29, 1942	Yield % (See Note)
						This Year	Last Year						
South & Central America													
Antofagasta (Chili) & Bolivia	834	24.5.42	£ 21,710	+ 4,890	21	£ 437,790	£ 363,130	+ 74,660	Ord. Stk.	10½	3½	9½	Nil
Argentine North Eastern	753	23.5.42	ps. 200,400	+ ps. 45,800	47	ps. 8,428,400	ps. 6,643,200	+ ps. 1,785,200	"	4	5	4	Nil
Bolivar	174	Apr. 1942	4,330	+ 418	17	18,485	14,932	+ 3,526	6 p.c. Deb.	8	2½	8½	Nil
Brazil	...	...	...	...	...	...	...	...	Bonds	7½	1½	12	Nil
Buenos Ayres & Pacific	2,801	23.5.42	ps. 1,580,000	+ ps. 35,000	47	ps. 68,596,000	ps. 67,425,000	+ ps. 1,171,000	Ord. Stk.	10½	3½	9	Nil
Buenos Ayres Great Southern	5,080	23.5.42	ps. 2,402,000	+ ps. 94,000	47	ps. 114,963,000	ps. 104,824,000	+ ps. 10,139,000	Ord. Stk.	10½	3½	9	Nil
Buenos Ayres Western	1,930	23.5.42	ps. 840,000	+ ps. 3,000	47	ps. 40,299,000	ps. 36,930,000	+ ps. 3,369,000	"	9	2½	7½	Nil
Central Argentine	3,700	23.5.42	ps. 1,912,150	+ ps. 91,600	47	ps. 82,417,100	ps. 77,035,600	+ ps. 5,381,500	"	8½	2½	6½	Nil
Do	...	...	...	...	...	...	...	...	Div.	2½	1	3½	Nil
Cent. Uruguay of M. Video	972	16.5.42	30,250	+ 5,093	46	1,162,380	1,057,493	+ 104,887	Ord. Stk.	9½	1½	6½	Nil
Costa Rica	262	Apr. 1942	11,546	+ 9,613	42	212,569	198,897	+ 13,672	Stk.	15½	11½	13	Nil
Dorada	70	Apr. 1942	14,180	+ 1,680	17	47,664	49,200	+ 1,536	1 Mt. Db.	97	97	90½	6½
Entre Rios	808	23.5.42	ps. 264,600	+ ps. 60,700	47	ps. 12,136,000	ps. 9,878,100	+ ps. 2,257,900	Ord. Stk.	6½	1	6	Nil
Great Western of Brazil	1,030	23.5.42	8,100	+ 1,400	21	212,900	207,900	+ 5,000	Ord. Sh.	11/-	1/-	1	Nil
International of Cl. Amer.	794	Mar. 1942	\$180,385	+ \$71,407	12	\$513,825	\$293,176	+ \$220,649	1st Pref.	—	6d.	4	Nil
Interoceanic of Mexico	...	...	...	...	...	...	...	...	...	...	...	...	...
La Guaira & Caracas	22½	Apr. 1942	6,308	+ 393	17	26,170	24,910	+ 1,260	"	—	—	—	—
Leopoldina	1,918	16.5.42	28,212	+ 5,312	20	581,976	464,995	+ 116,981	Ord. Stk.	4	1	4½	Nil
Mexican	483	21.5.42	ps. 322,300	+ ps. 15,500	20	ps. 6,964,100	ps. 6,340,100	+ ps. 624,000	"	8	—	2	Nil
Midland of Uruguay	319	Apr. 1942	13,856	+ 1,640	41	136,984	120,202	+ 16,782	"	—	—	—	—
Nitrate	386	15.5.42	7,789	+ 3,691	19	54,875	38,284	+ 16,591	Ord. Sh.	66½	1½	3½	3½
Paraguay Central	274	23.5.42	\$4,652,000	+ \$802,000	47	\$168,321,000	\$153,362,000	+ \$14,959,000	P.r. Lt. Stk.	43½	29	45½	13½
Peruvian Corporation	1,058	Apr. 1942	80,727	+ 12,247	43	752,443	646,466	+ 105,977	Pref.	61	1½	9	Nil
Salvador	100	Mar. 1942	c 126,000	+ c 16,000	37	c 782,172	c 617,683	+ c 164,489	"	—	—	—	—
San Paulo	153½	17.5.42	36,371	+ 3,454	20	690,856	712,310	+ 21,454	Ord. Stk.	52	24½	53	3½
Taital	160	Mar. 1942	3,900	+ 1,270	39	39,015	25,140	+ 13,875	Ord. Sh.	1	6/-	1½	Nil
United of Havana	1,346	23.5.42	35,985	+ 9,266	47	1,490,801	1,146,802	+ 343,999	Ord. Stk.	2½	—	3	Nil
Uruguay Northern	73	Apr. 1942	980	—	41	12,070	11,329	+ 741	"	—	—	—	—
Canada													
Canadian National	23,562	21.5.42	1,399,400	+ 182,600	21	25,726,000	21,450,400	+ 4,275,600	"	—	—	—	—
Canadian Pacific	17,139	21.5.42	992,000	+ 117,800	21	18,619,800	14,955,800	+ 3,664,000	Ord. Stk.	13½	7½	10	Nil
India													
Barsi Light	202	Jan. 1942	11,805	— 3,525	45	137,482	135,210	+ 2,272	"	—	—	—	—
Bengal & North Western	2,090	Apr. 1942	273,450	+ 7,592	4	273,450	281,042	+ 7,592	Ord. Stk.	345	253	347½	5½
Bengal-Nagpur	3,267	20.2.42	300,150	+ 8,254	48	8,793,958	8,008,824	+ 785,134	"	101	95½	96	4½
Madras & Southern Mahratta	2,939	20.3.42	218,025	+ 5,634	51	7,085,480	6,050,718	+ 1,034,762	"	105½	101½	99	7½
Rohilkund & Kumaon	571	Apr. 1942	60,600	+ 8,602	4	60,600	69,202	+ 8,602	"	342	290	347½	4½
South Indian	2,402	20.2.42	152,476	+ 17,818	51	5,167,950	4,463,524	+ 704,436	"	100	87	93½	3½
Various													
Beira	204	Mar. 1942	85,419	—	26	453,891	—	—	P.r. Sh.	1½	29/-	2½	Nil
Egyptian Delta	607	28.3.42	8,235	+ 2,841	49	315,364	224,034	+ 91,330	B. Deb.	68	45	30	11½
Manila	...	...	...	...	...	...	...	...	Inc. Deb.	90½	85½	89½	6½
Midland of W. Australia	277	Dec. 1941	18,945	+ 6,706	21	122,537	91,124	+ 31,413	"	—	—	—	—
Nigerian	1,900	28.2.42	97,375	+ 29,933	47	2,894,620	2,124,026	+ 770,594	"	—	—	—	—
Rhodesia	2,442	Mar. 1942	505,912	—	26	2,879,180	—	—	"	—	—	—	—
South Africa	13,291	4.4.42	803,412	+ 88,748	1	484,040	458,548	+ 25,492	"	—	—	—	—
Victoria	4,774	Jan. 1942	1,301,285	+ 378,792	29	7,938,536	6,547,339	+ 1,391,197	"	—	—	—	—

Note. Yields are based on the approximate current prices and are within a fraction of ½. Argentine traffic is given in pesos
 † Receipts are calculated @ 1s. 6d. to the rupee
 ‡ ex dividend